

2-3 EDWARD VII.

SESSIONAL PAPER No. 21

A. 1903

THIRTY-FIFTH ANNUAL REPORT

OF THE

DEPARTMENT OF MARINE AND FISHERIES

1902

M A R I N E

PRINTED BY ORDER OF PARLIAMENT



O T T A W A

PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1903

[No. 21—1903]

*To His Excellency the Right Honourable SIR GILBERT JOHN ELLIOT, EARL OF MINTO
Governor General of Canada.*

MAY IT PLEASE YOUR EXCELLENCY :

I have the honour to submit herewith, for the information of Your Excellency and the Legislature of Canada, the Thirty-Fifth Annual Report of the Department of Marine and Fisheries, Marine Branch.

I have the honour to be,

Your Excellency's most obedient servant,

JOSEPH RAYMOND F. PRÉFONTAINE,

Minister of Marine and Fisheries.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, December, 1902.

CONTENTS.

	PAGE.
Report submitted by Minister.....	ii
Report of Deputy Minister.....	3

SUBJECTS EMBRACED IN DEPUTY MINISTERS REPORT.

PART I.

Buoys and Beacons.....	5-48
Buoys and Beacons, List of.....	88
Casualties, St. Lawrence River.....	27
Correspondence ...	4
Coasting Trade of Canada.....	25
Chief Engineer's Annual Report.....	43
General Superintendent of Lighthouses, Detailed Report of Lighthouse Construction, &c.....	56
Dominion Steamers.....	12
Employees, outside service (Marine Branch)	11
Geographic Names.....	50
Hydrographic Survey.....	50
Lighthouse Service.....	4
" Ontario Division.....	57
" Quebec Division.....	65
" Nova Scotia Division.....	74
" New Brunswick Division.....	78
" Prince Edward Island Division.....	82
" British Columbia Division.....	84
Live Stock Shipments, Inspection of.....	21
Life Boat Stations	24
Maintaining Dominion Steamers, Statement of Expenditure.....	19
Merchant Shipping.....	4
Masters' and Mates' Certificates.....	19
" " Statement of Receipts and Expenditure.....	20
Meteorological Service.....	21
Marine Hospitals.....	7
Oil for use of lighthouses.....	6
Outside Service Employees (Marine Branch)	11
Obstruction to Navigation, Removal of	23-47
Sick and Distressed Mariners.....	7
" " Statement of Receipts and Expenditure	9
Steamboat Inspection.....	9
" " Statement of Receipts and Expenditure.. ..	10
Steamboat Inspectors, List of.....	10
Signal Service.....	22
Sable Island—Tree Planting.....	25
Tidal Survey.....	91
Wrecks and Casualties.....	21
" " " St. Lawrence River.....	27

APPENDICES.

PART II.

	PAGE.
Expenditure, Statement of, for 1900-1.....	3
Expenditure since Confederation.....	42
Engineer's Certificates.....	140
Live Stock Shipments, Montreal.....	26
" " Halifax.....	38
" " Charlottetown.....	38
" " St. John, N.B.....	40
" " Recapitulation.....	147
Life Saving Stations, Report on..	52
" " Total for 1902.....	148
Life-boat Stations, List of.....	54
Lighthouse, Keepers and Stations, List of.....	57
Masters and Mates, Report of Chairman of Board of Examiners.....	145
Meteorological Service..	7
Magnetic Observatories.....	18
Revenue Statement.....	5
Rewards for Humane Service.....	144
Steamboat Inspection, Report of Chairman, and Vessels Inspected.....	71
Steamboat Inspection, Statement of dues collected.....	6
Signal Service.....	20
Sick Mariners' Dues.....	56
Seismological Observations.....	14
Wharfs, Statement relating to.....	48

PART I.

ALPHABETICAL INDEX.

A.

	PAGE.
<i>Aberdeen</i>	12
Acetylene lighting.....	45
Aids to navigation—Ontario.....	57
" New, Quebec.....	66
" " Nova Scotia	75
" " New Brunswick	79
" " Prince Edward Island.....	83
" " British Columbia.. ..	84
Apple River light	76
Anderson Hollow light.....	79

B.

Buoys and Beacons	5
<i>Brant</i>	15
<i>Bayfield</i>	18
Buoyage.....	48
Burlington Channel light.....	61
Buoys and Beacons—List of in the Dominion	88
" " Ontario	64
" " Quebec	72
" " Nova Scotia.....	77
" " New Brunswick.....	81
" " British Columbia.....	86
" " Prince Edward Island.....	84
Bourgeois Inlet light.	75
Brooklyn light.....	76
Buctouche Bar.....	80
British Columbia Lighthouse Division.....	84
Brockton Point light.....	85

C.

Correspondence.....	4
<i>Contest</i>	18
Coasting Trade of Canada	25
Casualties, St. Lawrence River.. ..	27
Chief Engineer's Annual Report	43
" " Staff	43
" " Office work.....	43
" Detailed Report	56
Cape Croker light	59
Copper Mine Point light.....	61
Cape Santé Semaphore.	70
Cape Sable light.. ..	76
Canso signal staff	76
Cape la Ronde light.....	76
Cranberry Head fog alarm.....	76
Cape Tormentine light and fog bell.....	79

D.

	PAGE
Dominion steamers and statement of maintenance.....	12-19
<i>Druid</i>	16
Digby Pier light.....	75

E.

Employees outside service.....	11
Elliot Point light.....	61

F.

Fog alarm machinery.....	46
Frenchman Bay light.....	61
Flowerpot Island fog alarm.....	62
Fame Point fog alarm.....	66
Father Point.....	69

G.

Geographic names.....	50
Gallops Canal head light.....	59
" North Channel light.....	59
Great Bras D'Or light.....	75
Gannet Rock light.....	80

H.

Hydrographic Work—Great Lakes.....	50-52
" Atlantic Coast and St. Lawrence River.....	51
" Pacific Coast.....	53
Hilton Light discontinued.....	62
Henry Island light.....	75
Hawke Islet fog alarm.....	76

I.

Improvements and Repairs at existing Stations—Ontario....	61
" " Quebec.....	69
" " Nova Scotia.....	76
" " New Brunswick.....	80
" " Prince Edward Island.....	83
" " British Columbia.....	85
Isle Verte light.....	67
Isle Marie light.....	68
Isle de Deslaurier range light.....	69
Isle à l'Aigle light.....	69
Isle aux Prunes light.....	70
Isle Ouetique.....	76

J.

Jerseyman Island light.....	76
-----------------------------	----

SESSIONAL PAPER No. 21

K.

	PAGE.
Kingsville light.....	61
Kincardine light.....	62
Kingsport	76

L.

Lighthouse service	4
Lansdowne	12
Lady Laurier.....	17
Live Stock Shipments.....	21
Life-boat Stations	24
Lake St. Francis Middle Ground light	58
Lighthouses—Ontario Division.....	57
" Quebec "	65
" Nova Scotia Division.....	74
" New Brunswick Division.....	78
" Prince Edward Island Division.....	82
" British Columbia Division	84
Lower Traverse crib.....	67
" lightship	70
Louisburg fog alarm.....	75

M.

Merchant Shipping.	4
Marine Hospitals.....	7
Minto	13
Masters and Mates—Certificates, Sea-going..	19
" " Inland and Coasting.....	20
" " Receipts and Expenditure ..	20
Meteorological Service.....	21
Meaford light.....	60
Michipicoten Harbour light.....	61
Medjik Bluff light.....	80
Murray Harbour light.....	83
Miminegash light.....	83

N.

Narrow Island light.....	62
North of Halfway Point	70
Nova Scotia Lighthouse Division.....	74
New Brunswick " "	78

O.

Oil for Lighthouses..	6
Outside Service, Marine Branch	11
Obstructions to Navigation, Removal of.....	23-47
Ontario Lighthouse Division.....	57
Oak Point light.....	79

P

Port Colborne temporary light.....	59
Pelee Passage light.....	59
Pointe aux Pins light.....	62
Point Echouerie light.....	66

P—Continued.

	PAGE.
Port Daniel light.....	66
Point Nicholas semaphore.....	67
Port St. Francis light	70
Port Felix light.....	75
Petit de Grat light.....	76
Partridge Island, observatory and fog alarm.....	80
Prince Edward Island Lighthouse Division	82
Portier Pass light....	85

Q

<i>Quadra</i>	16
Quebec Lighthouse Division	65

R

Richards landing light.....	60
Rainy River range light.....	62
Richibucto beach light.....	80

S

Sick and Distressed Mariners	7
" " Statement of receipts and expenditure.....	9
Steamboat Inspection.....	9
" " Statement of receipts and expenditure.....	10
Steamboat inspectors, list of.....	10
<i>Stanley</i>	14
<i>Shamrock</i>	17
<i>Scout</i>	18
Signal Service.....	22
Sable Island, Tree planting	25
St. Lawrence River, casualties, investigation of.....	27
Soulanges Canal Upper Entrance, new towers.....	57
St. Regis Dyke light.....	58
Stribling Point light.....	60
St. Placide new tower.....	61
Snug Harbour light.	62
St. Antoine de Tilley, light.....	67
St. Antoine Upper light.....	70
Stonehaven light.....	80
Sea Cow Head light.....	83

T

Tidal Survey.....	54-91
Thornbury light.....	62

U

Upper Traverse light.....	70
---------------------------	----

V

Verchères Traverse light.....	68
" Village light.	68
Vancouver North, Magnetic Range	84

SESSIONAL PAPER No. 21

W

	PAGE.
Wrecks and casualties.....	21
Wolfville light.....	75
Wood Island Harbour range light.....	88
Walker Rock light.....	85

Z

Zephy Rock light ship.....	80
----------------------------	----

PART II

APPENDICES.

ALPHABETICAL INDEX.

E

	PAGE
Expenditure, Statement of	3
Examiners of Masters and Mates—Report of Bloomfield Douglas.....	145
Expenditure since Confederation, Statement of.....	42
Engineers' Certificates.....	140

L

Live Stock Shipments—Report of Inspector—Montreal.....	26
" " St. John, N.B.....	40
" " Halifax, N.S.....	38
" " Charlottetown.....	38
" " Recapitulation	147
Life Saving Stations Report.....	52
" " Statement.....	54
List of Lightkeepers, Stations, &c.....	57

M

Meteorological—R. F. Stupart's Report ...	7
Magnetic Observatory— " "	18
" " St. John.....	17
" " Quebec.....	17

R

Revenue, Statement of.....	5
Rewards for Saving Life.	144
Recapitulation—Live Stock shipments.....	147

S

Signal Service—J. U. Gregory's Report, Quebec.....	20
" R. M. Macrory, Halifax.....	24
Sick Mariners' Dues Collected.....	56
Steamboat Inspection—Chairman's Report.....	71
" Dues Collected.....	6
Steam Vessels Inspected, West Ontario Division, by John Dodds.....	76
" " " F. W. McKean.....	79
" " in Canada but registered elsewhere, M. R. Davis	95
" not Inspected.....	83
Steam Vessels Inspected, West Ontario Division, Wm. Evans, Hull Inspector.....	85
" " in Canada by Wm. Evans, but registered elsewhere.....	88
" East Ontario, inspected by Thos. P. Thompson.....	89
" Inspected, East Ontario Division, M. R. Davis, Hull Inspector. ..	93
" " in Canada by Thos. P. Thompson, but registered elsewhere.....	92
" East Ontario, &c., not inspected, Thos. P. Thompson	92
" Inspected in East Ontario but registered elsewhere, M. R. Davis	95
" Montreal Division, inspected by Wm. Laurie.....	97
" " " Louis Arpin.....	100

SESSIONAL PAPER No. 21

S—Continued.

	PAGE.
Steam Vessels, Montreal Division, not inspected by Wm. Laurie and Louis Arpin.....	101
" Inspected in Canada by Wm. Laurie but registered elsewhere.....	101
" Quebec Division inspected by Jos. Samson.....	102
" " " not inspected by Jos. Samson.....	105
" " and Montreal Division, inspected by Pierre D. Brunelle, hulls.....	106
" Nova Scotia Division, inspected by John P. Esdale.....	108
" Inspected in Canada, by John P. Esdale, but registered elsewhere.....	110
" Nova Scotia Division, not inspected by John P. Esdale.	111
" " " inspected, S. R. Hill, Hull Inspection.....	112
" Inspected in Canada, by S. R. Hill, but registered elsewhere.....	113
" New Brunswick and P. E. Island Division, inspected by W. L. Waring.....	114
" Inspected in Canada, by W. L. Waring, but registered elsewhere... ..	116
" New Brunswick and P. E. Island Division, not inspected by W. L. Waring....	117
" " " " inspected by I. J. Olive, Hull Inspector.....	118
" Inspected in Canada, by I. J. Olive, but registered elsewhere.....	119
" British Columbia Division, inspected by J. A. Thompson.....	120
" Inspected in Canada, by J. A. Thompson, but registered elsewhere.	122
" British Columbia Division, not inspected by J. A. Thompson.....	122
" Vancouver and Yukon Division, inspected by F. N. Richardson.....	123
" " " " " in Canada, but registered elsewhere.....	125
" " not inspected.....	126
" British Columbia Division, inspected by R. Collister, Hull Inspection.....	127
" " " " " but registered elsewhere.....	128
" Manitoba and North-west Division, inspected by Geo. P. Philipps.....	129
" " " " not " " ".....	131
" " " " " in Canada, registered elsewhere..	131
" Added to the Dominion in West Ontario Division, inspected by E. W. McKean...	132
" " " " " John Dodds.....	132
" " " " East " " Thomas Thompson.....	133
" " " " Montreal " " W. Laurie and L. Arpin.....	133
" " " " Quebec " " Joseph Samson and Pierre Brunelle.....	134
" " " " Nova Scotia " John P. Esdaile...	134
" " " " New Brunswick and P. E. Division, inspected by W. L. Waring... ..	135
" " " " British Columbia Division, inspected by J. A. Thompson.....	135
" " " " Vancouver and Yukon Division, inspected by F. N. Richardson.....	136
" " " " North-west Territories Division, inspected by George P. Phillips.....	136
" Broken up as unfit for service—West Ontario.....	137
" " " " East Ontario.....	137
" " " " Montreal.....	138
Steam Vessels broken up as unfit for service—Quebec.....	138
" " " " Nova Scotia.....	138
" " " " New Brunswick and Prince Edward Island.....	139
" " " " British Columbia.....	139
" " " " Vancouver.....	139
" " " " Manitoba and North-west Territories..	140
List of Certificates to Engineers of Steamboats.....	140

T.

Tow Barges Inspected—M. R. Davies.....	96
--	----

W.

Wharfs, Statement relating to.....	48
------------------------------------	----

PART I

THE REPORT OF THE DEPUTY MINISTER—THE REPORT OF THE
CHIEF ENGINEER IN DETAIL RELATING TO CONSTRUCTION
AND REPAIRS TO LIGHTHOUSES, HYDROGRAPHIC
SURVEY AND TIDAL SURVEY.

REPORT OF THE DEPUTY MINISTER.

To the Honourable

RAYMOND PRÉFONTAINE,

Minister of Marine and Fisheries.

SIR,—I have the honour to report on the transactions of the Marine Branch of this department for the fiscal year ended June 30 last, and to give an account of a portion of the business up to date.

In Part I. of this report will be found the detailed report of the chief engineer on construction and maintenance of lighthouses and other aids to navigation, references to the reports of the chairman of the Board of Steamboat Inspection, chairman of the Board of Examiners of Masters and Mates, the inspectors of Live Stock Shipments, the director of the Meteorological and Magnetic Service, the inspector of Signal Service and the reports on Life-boat Stations and Rewards for Humane Service.

A short account of the work of the Dominion steamers is given and the expenditure in connection therewith, the buoyage of the coast, harbours and inland waters, the purchase of oil for the use of lighthouses, the marine hospitals in the Dominion, certificates to masters and mates, and wrecks and casualties.

In Part II. the reports from which the synopses have been made will be found in extenso, also statements of expenditure, revenue, sick mariners' dues, wharfage, wrecks and casualties, steamboat inspection, and a list of light-keepers.

The amount expended on the various branches of the public service comprised in the Marine branch of this department, during the fiscal year ended June 30 last, was \$1,431,371.76, the expenditure for the previous year was \$967,484.01, not including expenditure for civil government. The expenditure for civil government for the fiscal year ended June 30 last, was \$61,183.32, and for civil government salaries, contingencies, \$9,063.00. It will thus be seen that the expenditure for the various branches of the Marine branch and for civil government was \$1,501,618.08. The Fisheries expenditure amounted to \$393,627.21, total \$1,895,245.29.

The amount voted by Parliament for the different branches of the department of Marine and Fisheries, including Fisheries and the departmental salaries was \$2,088,824.74, it will thus be seen that the expenditure for the fiscal year was \$193,579.45 less than the amount voted by Parliament.

The whole number of persons in the outside service of the Marine branch, including crews of fishery and marine steamers at the date of this report is 1,916.

During the past fiscal year the expenditure for maintenance of lights and coast service amounted to \$537,373.93 : construction, \$158,714.09 : total for maintenance and construction, \$696,088.02 ; while for the previous year the expenditure for lighthouse

2-3 EDWARD VII., A. 1903

and coast service, including construction was \$578,812.72; showing an increase of expenditure for the year ending June 30 last, of \$117,275.30.

The appropriation for this service was \$836,560, the expenditure being \$140,471.98 less than the appropriation of Parliament for the fiscal year.

LIGHTHOUSE SERVICE.

The lighthouse service of the Dominion is divided as follows :—The Ontario division, embracing all lights from Montreal westward to the North-west Territories; the Quebec division, extending below Montreal and including the river and gulf of St. Lawrence and Strait of Belle Isle; the Nova Scotia division, including St. Paul's Island, Cape Breton, Sable Island and Cape Race, Newfoundland; the New Brunswick division; the Prince Edward Island division and the British Columbia division, each including lights within the provincial boundaries.

The total number of light stations, lightships and fog-alarm stations in the Dominion on June 30, 1902, was 713, and lights shown 899; the number of steam whistles, fog-horns, bells and guns 91; the number of light-keepers and engineers of fog-alarms with masters of lightships was 719.

The report of the chief engineer relating to lighthouse construction, repairs, hydrographic surveys, &c., will be found in Part I. The principal repairs, changes and improvements at existing stations are referred to in his report, also new aids to navigation. The work done at fog-alarm stations in connection with steam whistles, compressed air horns and explosives, are dealt with under the proper headings. Information is also given respecting the extent of repairs and some account of the repairs in detail, under the head of the station.

CORRESPONDENCE.

About 21,753 letters, exclusive of telegrams, were received in the department during the fiscal year. The correspondence was carefully examined and replied to as far as necessary. About 13,000 letters were sent out during the same period. Forms, reports, circular letters, notices inviting tenders, are not included in the number of letters addressed to this department or sent out.

These forms, &c., are numerous and require special attention as the matters to which they refer are important.

In the Records Branch of the department the letters received are carefully examined, entered in the record book, placed on file, and the copy of the reply attached, so that the letters and the answers can readily be seen, and any subject easily followed up.

MERCHANT SHIPPING.

Reports relating to merchant shipping for the calendar year of 1902 have not been received from the registrars of shipping in various parts of the Dominion. The reports are made up to the end of the calendar year, as provided by the Canadian Shipping Act, and therefore, will not be received until some time after the month of January.

SESSIONAL PAPER No. 21

The statements showing the number of vessels in the registry books of the Dominion, December 31, 1902, will appear in Supplement No. 1 of this report. The number of new vessels built and registered will also be shown, and also a comparative statement of the tonnage of new vessels built and registered from 1874 to 1902, both inclusive.

Mr. W. L. Magee, chief clerk, attends to all matters in connection with merchants shipping.

BUOYS AND BEACONS.

The extended coast line of Canada, and numerous bays, inlets, rivers, lakes, harbours and other navigable waters require a large number of buoys which are maintained at an average cost of \$69,000 per annum. For the fiscal year ending June 30 last, the service cost \$81,903.96. The cost of this service is materially increased in years when large contracts are made for steel signal and other coast buoys.

The department has been for some time past substituting steel coast buoys for wooden buoys, with favourable results. The districts now buoyed in all parts of the Dominion number about 330, and the buoys number 3,150. A record of the names of shoals, dangers, reefs and various points in channels, harbours, &c., where the buoys are placed, is carefully maintained; this enables the department to immediately locate the buoys when any reference is made to them in the correspondence.

The contract system has been found to work most economically and efficiently; in the majority of instances the contracts are immediately under the supervision of departmental officers, whose duty it is to report to the department any neglect of work on the part of the contractors. There are now existing about 200 contracts, some of which will shortly expire, but new contracts will be entered into in the spring. These contracts are generally made for a period of 3 years. The contractors are paid semi-annually upon the certificate of the superintending officer. There are, however, some districts not under contract; the work is being attended to by the harbour masters. In these cases it has been found more advantageous to place the work immediately in the hands of these officers.

A large number of whistling, bell and other iron buoys are maintained along the coast of the several provinces by Dominion steamers, particularly the Nova Scotia, New Brunswick and British Columbia coast. The cost of this maintenance by the steamers is not charged directly to the buoy service but is included in the cost of maintenance of steamers which frequently perform the double duty of attending to lighthouses and the coast buoy service, on the same trip.

The expenditure in connection with the buoy service for the year ended June 30, 1902, was as follows:—

For the province of Quebec including the port of Montreal.	\$25,852 48
Above Montreal including Ontario.....	9,644 81
Nova Scotia.....	20,904 26
New Brunswick.....	18,360 70
British Columbia.....	4,287 13
Prince Edward Island.....	2,854 58
Total.....	\$81,903 96

2-3 EDWARD VII., A. 1903

In addition to the buoys for marking dangers 42 gas buoys are maintained showing lights ; 12 in the Quebec Agency on the St. Lawrence River ; 25 between Montreal and Prescott also on the St. Lawrence River ; 1 in Pelee Passage, Lake Erie ; 1 at the mouth of the Detroit River and 3 in Parry Sound.

The coast buoys maintained by Dominion steamers on the coast of Nova Scotia consist of 23 automatic whistling buoys, 18 bell buoys and 128 steel can and conical. In the New Brunswick agency there are maintained in the same way 16 signal buoys, 15 steel can and conical buoys and one bell boat. New can and conical buoys were supplied the New Brunswick agency during the year but several were sent to places where contracts exist and several were held as spare bouys ; there were 18 of these new buoys supplied.

The signal coast buoys of Prince Edward Island number 3, the service in general is performed under contract with the exception of maintaining the signal buoys. Two conical buoys to be added to the coast buoys have recently been supplied.

In the province of Quebec under the Quebec agency, one whistling buoy was established at Manicougan and 1 bell buoy at Matane. A large number of can and conical buoys are maintained by the Dominion steamers on the St. Lawrence river between Montreal and Quebec and also below Quebec. The complete list of these buoys forms part of the chief engineer's report. The steamer *Shamrock* is constantly employed in the buoy service on the St. Lawrence river between Montreal and Quebec and the *Scout* between Montreal and Prescott and attends the gas buoys above Montreal on the St. Lawrence. The new Dominion steamer *Druid* performs the buoy service below Quebec and attends the gas buoys in the Quebec district.

The coast buoy service in British Columbia is performed by the Dominion steamer *Quadra* and the list of buoys in the Chief Engineer's report shows the number of steel and other buoys but no whistling buoys have yet been established there. The service at the mouth of the Fraser River is performed by the Public Works steamer *Samson* employed by this Department.

Tenders for 9 steel can buoys and 5 conical buoys for the Quebec district were invited and also tenders for 2 bell buoys one of which was placed at Matane, the other will be placed on Graham Shoal, Big Duck Island, Lake Huron ; also tenders for 2 conical buoys and 2 can buoys which will be placed on dangers in Georgian Bay.

OIL FOR USE OF LIGHTHOUSES.

The contract for supplying lighthouse oil was carried out by the Imperial Oil Company of Sarnia, for the season of 1902.

The specification upon which tenders were invited, required the oil to weigh at 62° Fahr., not less than 7.85, nor more than 8.20 lbs. per gallon, and to withstand a flash test of 115° Fahr.

The quantity of oil supplied lights above Montreal during the season of 1902, was 22,802.90 gallons imperial measure, which cost \$4,047.34 ; to the lights in the Quebec district, 26,609 gallons, which cost \$4,448.97 ; to the lights in the Nova Scotia district, 53,281 gallons, which cost \$10,567.53 ; to the New Brunswick district, 11,676 gallons, costing \$2,535.65 ; to the Prince Edward Island district, 6,255 gallons, costing \$1,376.10.

SESSIONAL PAPER No. 21

In addition to this the department purchased from the Standard Oil Company, of New York, 11,500 gallons of American oil for the Nova Scotia district, at a cost of 16½ cents a gallon in New York ; for New Brunswick, 5,000 gallons, at 16½ cents a gallon : for the district above Montreal, 1,550 gallons at the same price in New York. The freight was paid by the department. In addition to this 7,000 gallons of American oil was purchased for the British Columbia district, at 25 cents a gallon in bond.

The list of prices according to contract is as follows :—

Delivered at	Per Gallon	
	in barrels.	in case.
	Cts.	Cts.
Sarnia.	14½	19
Port Dalhousie	14½	19
Kingston	15½	20½
Montreal.	15½	20½
Quebec.	16½	21½
St. John, N.B.	16½	21½
Pictou, N.S.	16½	21½
Halifax, N.S.	16½	21½
Charlottetown, P.E.I.	17½	22½

SICK AND DISTRESSED MARINERS.

MARINE HOSPITALS.

Under the provisions of chapter 76, Revised Statutes, a duty of two cents per ton register is levied on every vessel arriving in any port in the provinces of Quebec, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia, the money thus collected forming the Sick Mariners' Fund. Vessels of the burden of 100 tons and less pay the duty once in each calendar year, and vessels of more than 100 tons, three times in each year.

By an amendment of this Act passed at the session of Parliament in 1887, 50-51 Victoria, chapter 40, it is provided that no vessel, not registered in Canada and which is employed exclusively in fishing or on a fishing voyage, shall be subject to the payment of this duty.

The receipts for the fiscal year ended June 30 last, amounted to \$65,853.93, being an increase of \$6,014.94, as compared with the preceding year. The increase and decrease in receipts for sick mariners' dues in the various provinces were as follows :— Nova Scotia, decrease \$1,734.50 ; New Brunswick, increase, \$1,873.93 ; Quebec, increase \$4,701.11 ; Prince Edward Island, decrease \$56.96 ; British Columbia, increase \$1,522.62.

The Sick Mariners Act does not apply to the province of Ontario, and consequently no dues are collected from vessels in that province, although a small expenditure is incurred on account of sick seamen. An appropriation is made by Parliament to cover the expenditure at Kingston and St. Catharines, where general hospitals have been established and sick seamen were paid for at a per diem rate of 90 cents.

2-3 EDWARD VII., A. 1903

In the province of Quebec, the expenditure on account of sick seamen amounted to \$7,927.62, being \$196.29 more than the previous year. The total collections for the entire province amounted to \$19,763.92, being \$1,701.11 more than in the previous year.

At the port of Montreal, sick seamen are cared for at the General Hospital and at Notre Dame Hospital, under an arrangement made by the department, by which 90 cents per diem is paid for board and medical attendance of each seaman. The sick mariners' dues collected at the port of Montreal during the fiscal year ended June 30, amounted to \$9,741.66.

At the port of Quebec sick seamen are cared for at the Jeffery Hale and the Hotel Dieu hospitals, the sum of 90 cents per diem for each seaman is allowed for medical attendance and board. The sick mariners' dues collected at Quebec amounted to \$7,267.66.

The expenditure on account of sick seamen in the province of New Brunswick for the fiscal year amounted to \$8,977.62, being \$3,381.93 more than the preceding year, and the collection of dues to \$13,230.14, or \$1,873.93 more than the previous year. Marine hospitals have been maintained at Miramichi, Richibucto and Bathurst.

In the province of Nova Scotia, marine hospitals are maintained at the ports of Yarmouth, Pictou, Sydney, Lunenburg and Point Tupper. The total expenditure on account of sick seamen in the province of Nova Scotia for the fiscal year amounted to \$24,221.02 and the receipts to \$20,767.55.

At Halifax provision is made for the care of sick seamen at the Victoria General Hospital, under arrangements made with the managers, by which the sum of 90 cents per diem is allowed for board and medical attendance to sick seamen.

In the province of Prince Edward Island the sum expended on account of sick and disabled seamen during the fiscal year was \$1,616.11, and the receipts from sick mariners' dues were \$454.84.

Sick seamen are cared for at the Charlottetown and Prince Edward Island hospitals under arrangements made with the managers of these institutions, at the same rate as is paid to the public hospitals in other parts of the Dominion.

In the province of British Columbia the sum of \$8,240.15 was expended for sick and disabled seamen, while the receipts from the collection of sick mariners' dues amounted to \$11,898.64.

The marine hospital at Victoria has in attendance a medical superintendent with a salary of \$300 per annum, and a keeper whose salary is \$500 per annum. He is also allowed a rate of \$5 a week for board and attendance of each seaman. The keeper procures fuel, light, &c., at his own expense.

At ports where no hospitals are established in the provinces of Quebec, Nova Scotia, New Brunswick, British Columbia and Prince Edward Island, sick seamen are cared for under the chief officer of Customs, when the vessel to which the seamen belong have paid their dues according to law. A circular to collectors of Customs was issued February 7, 1891, permitting sick seamen to be attended at the port of arrival of a vessel, provided that the regular dues were previously paid at some port.

During the fiscal year the sum of \$799.33 was expended for shipwrecked and distressed seamen, under the provisions of the Sick and Distressed Mariners Act.

SESSIONAL PAPER No. 21

The total expenditure on account of sick and disabled seamen and marine hospitals amounted to \$51,827.12, and the appropriation of parliament for this service was \$50,000. The dues collected amounted to \$65,853.83.

The receipts and expenditure in connection with sick and distressed seamen from the year 1869 were as follows:—

		Receipts.		Expenditure.	
		\$	cts.	\$	cts.
For the fiscal year ended 30 June	1869..	31,353	78	26,987	64
	1870..	31,410	46	27,029	34
	1871..	29,683	41	28,971	22
	1872..	34,911	64	34,947	60
	1873..	37,136	10	41,016	43
	1874..	41,500	16	59,778	90
	1875..	37,801	46	50,684	76
	1876..	41,287	66	48,828	49
	1877..	43,739	21	51,617	94
	1878..	44,665	07	43,780	90
	1879..	37,779	57	42,729	36
	1880..	42,523	20	42,160	91
	1881..	49,779	72	40,667	52
	1882..	45,951	47	39,359	11
	1883..	45,573	42	36,249	65
	1884..	48,667	07	39,553	58
	1885..	39,068	39	44,501	57
	1886..	49,848	05	50,377	62
	1887..	42,334	92	37,447	35
	1888..	41,669	64	36,447	85
	1889..	39,326	29	41,320	59
	1890..	47,881	75	41,729	11
	1891..	43,829	68	35,155	12
	1892..	45,381	92	33,498	83
	1893..	46,190	69	35,052	37
	1894..	49,105	40	38,403	94
	1895..	42,815	74	38,332	55
	1896..	45,751	61	36,683	36
	1897..	54,358	10	35,931	19
	1898..	54,552	81	34,526	83
	1899..	57,365	79	37,353	29
	1900..	59,971	84	32,743	30
	1901..	59,783	34	34,944	93
	1902..	65,853	83	51,827	12
Total		1,519,833	19	1,353,676	07

STEAMBOAT INSPECTION.

The total number of steamboats reported in the several districts in the Dominion is 1,513, of this number 128 were added to the Dominion during the year, the gross tonnage being 269,002.72. Fees were collected for inspection amounting to \$37,428.92; the fees from engineers for certificates amounted to \$910.00, and fees for inspection of tow barges to \$120, making the total receipts from steamboat inspection and engineer's certificates, \$38,458.92. The net receipt to the credit of the fund for the previous year amounted to \$32,876.57.

The total expenditure in connection with inspection was \$27,493.80, decrease of expenditure for the last fiscal year of \$1,753.79.

The consolidated laws relating to steamboat inspection came into force on the 1st day of January, 1899.

The report of the chairman of the Board of Steamboat Inspection forms Appendix No. 12 of this report.

The following is a comparative statement of the receipts and expenditure in connection with steamboat inspection :—

Receipts. | Expenditure.			Receipts. | Expenditure.		
\$ cts.			\$ cts. | \$ cts.		
For the fiscal year ended			For the fiscal year ended		
June 30, 1870	12,521 29	7,379 18	June 30, 1890	19,859 18	20,989 52
1871	10,369 96	8,321 00	1891	21,644 72	22,183 76
1872	11,710 43	8,500 00	1892	20,994 84	22,736 59
1873	15,412 75	11,205 54	1893	25,295 35	24,386 95
1874	15,603 19	10,291 58	1894	24,835 47	25,961 36
1875	15,011 90	12,199 81	1895	24,630 56	26,385 88
1876	13,811 24	13,081 86	1896	24,002 32	26,321 27
1877	15,858 42	12,073 01	1897	25,094 95	26,837 83
1878	12,431 25	13,228 28	1898	31,525 40	26,342 29
1879	12,331 16	13,076 46	1899	33,854 45	28,035 49
1880	15,424 02	11,854 34	1900	36,474 83	27,965 92
1881	16,905 49	12,211 65	1901	34,967 37	29,247 59
1882	15,277 78	14,835 97	1902	38,458 92	27,493 80
1883	12,577 36	16,209 02		637,355 28	623,861 12
1884	15,371 79	21,893 28	Deduct the expendi-	633,861 12	
1885	13,343 66	23,235 04	ture from receipts.		
1886	14,087 76	21,775 57			
1887	12,701 20	22,837 80	Balance to credit of		
1888	12,550 14	21,430 45	funds....	3,494 16	
1889	12,576 18	22,313 03			

The following list contains the names of the inspectors of boilers and machinery, and Hulls and equipments of steamboats, viz :—

Name.	Position.	Address.
Edward Adams.....	Chairman of Board of Steamboat Inspection.....	Ottawa.
M. P. McElhinney	Inspector of Hulls and Equipment..	"
I. J. Olive.....	"	St. John, N.B.
S. R. Hill	"	Halifax, N.S.
William Evans.....	"	Toronto, Ont.
M. R. Davis.....	"	Kingston.
P. D. Brunelle.....	"	Quebec.
R. Collister.	"	Victoria, B.C.
John Dodds	Inspector of Boilers and Machinery.....	Toronto, Ont.
E. W. McKean.	"	"
T. P. Thompson	"	Kingston, Ont.
Wm. Laurie	"	Montreal, P.Q.
L. Arpin	"	"
J. Samson.....	"	Quebec, P.Q.
J. P. Esdaile	"	Halifax, N.S.
W. L. Waring	"	St. John, N.B.
J. A. Thomson	"	Victoria, B.C.
G. P. Phillips	"	Rat Portage Ont.
Frank M. Richardson	"	Vancouver.
Douglas Stevens.....	Inspector of Dominion Steamers, &c	Halifax, N.S.

SESSIONAL PAPER No. 21

OUTSIDE SERVICE, MARINE BRANCH.

The number of persons employed in the Outside Service on June 30, 1902, was as follows :—

Superintendent of lights and light-keepers, &c., in Ontario and above Montreal.....	190
Officers of agency in the city of Quebec and light-keepers, fog-whistle-keepers, crews of light-ships, &c., at or below Montreal, in the province of Quebec.....	171
Agent, clerk, messenger, superintendent of light, light-keepers, fog-whistle-keepers, attendance at humane establishments, &c., in Nova Scotia....	233
Agent, clerk, messenger, superintendent of lights, light-keepers, fog-whistle-keepers, &c., in New Brunswick....	106
Agent, foreman of works, messenger and light-keepers, in Prince Edward Island.....	49
Agent and light-keepers in British Columbia.....	35
Officers and crews of Dominion steamers and vessels, including Fisheries Protection Service....	424
Coxswains of life-boats.....	25
Inspectors of steamboats....	19
“ shipments of live stock.....	4
Examiners of masters and mates, and clerk to chairman of Board....	16
Officers and servants in marine hospitals.....	18
Shipping masters.....	35
Harbour masters.....	218
Officers of observatories, meteorological observers, &c., receiving pay.....	166
Hydrographers and engineers at Ottawa....	10
Receivers of wrecks.....	45
Wharfingers.....	181
Making a total of.....	<u>1,916</u>

For the previous year the number was 1,941. In addition to the 1,916 mentioned above, there are 76 registrars of shipping, who act under the direction and control of this department, but are, at the same time, collectors of customs at various ports of registration, and receive no salary or fee in their capacity as registrars. There are 95 measurers or surveyors of shipping throughout the Dominion who act as officers of this department, and are remunerated from their fees of office, although in addition to such office, many of them hold positions in the customs service. Also, in addition to the above, by Orders of Council of April 21, and December 2, 1874, the chief officer of customs at each port in the provinces of Quebec, Nova Scotia, New Brunswick, British Columbia and Prince Edward Island, where no separate shipping office has been established, is to be held and deemed a shipping master, is to receive the fees, make the yearly returns to the department, and act in that capacity under its directions.

2-3 EDWARD VII., A. 1903

DOMINION STEAMERS.

'ABERDEEN.'

The *Aberdeen* is an iron screw steamer 180 feet long, 31 feet broad, and 16 feet deep; her tonnage is 674 gross, and 266 net. Her captain is Sigismund Bélanger, and her crew consists of 36 all told.

The *Aberdeen*, on July 1, proceeded down the St. Lawrence river and supplied lighthouses as far as Magdalen Islands, Bird Rocks and Bryon Island. When this work was completed the steamer went to Charlottetown for fresh water for the boilers and thence to Pictou for coal. The bunkers were filled and a considerable quantity of coal placed in the hold. The vessel then started on the return trip and supplied some of the stations with coal on her way up the river, arriving in Quebec on August 3. She immediately began to take in supplies for lighthouses and left Quebec on August 14 for the Straits of Belle Isle to supply fog-alarms and lighthouses. Colonel Anderson, chief engineer of the department, made an inspection of the lighthouses and fog-alarm stations in the Straits of Belle Isle, Cape Race and Cape Ray. This work was completed about August 29, and the steamer called at St. John's, Newfoundland, from there she went to Sydney for coal and returned to Quebec on September 12.

On October 4, the *Aberdeen* entered upon the buoy service on the St. Lawrence river, and afterwards took in supplies at Quebec and proceeded down the river, supplying lighthouses as far as Belle Isle. When this work was completed the steamer went to Sydney for coal, and thence to Bird Rocks. She then proceeded to Pictou, and from there returned to Quebec. The vessel was engaged in lighthouse service until November 24. After that date she was engaged in taking up gas buoys and landing them on the Queen's Wharf, Quebec.

The *Aberdeen* left Quebec on November 28 for Halifax, to engage in the service of the Nova Scotia agency. On her way the steamer lifted the automatic buoys of Prince Edward Island, and landed them at Charlottetown on December 2. She then resumed her trip to Halifax, calling at Pictou on the way and performing buoy service. She arrived at Halifax on December 13. Various work was performed up to December 19, when the *Aberdeen* proceeded to Sable Island, returning to Halifax on December 26. During the year 1901, the *Aberdeen* ran about 13,000 miles and consumed 1,762 tons of coal. The steamer was continued in the Nova Scotia agency in supplying lighthouses and fog alarm stations until May 27, 1902, on which date she arrived at Quebec.

Her first trip in 1902 down the St. Lawrence river was begun on June 16, and the steamer was engaged in supplying lights on the river up to July 1.

'LANSDOWNE.'

The *Lansdowne* is a wooden steamer, commanded by Captain George W. J. Bissett, and has a crew of 34 men in all. Her dimensions are 188 feet in length, 32 feet in breadth, and 15 feet in depth; gross tonnage 680, and registered tonnage 463.

This steamer was employed in the Nova Scotia agency on July 1, 1901, attending to the coast buoy service and delivering lighthouse supplies and coal to fog-alarm stations and other work of a similar character. The *Lansdowne* returned to her own

SESSIONAL PAPER No. 21

district in New Brunswick on July 25, and immediately began loading lighthouse supplies for the lighthouses in New Brunswick. The lighthouses supplied extend along the coast of the Bay of Fundy.

The work was pretty well accomplished by September 8, and the work of attending to the large automatic coast buoys was begun. This service occupied the vessel's time until October 25, when a trip of inspection of lighthouses was begun by the Chief Engineer, Agent and Inspector of Lights, and completed on November 7. The steamer was still employed in the New Brunswick agency until November 20, but owing to rough and stormy weather not much work was accomplished.

The *Lansdowne* was again ordered to Halifax to resume work in that agency, being the only government vessel available for such service in the both agencies. The work in the Nova Scotia agency was completed on December 28, when the *Lansdowne* returned to St. John and resumed buoy service until January 11, 1902.

The vessel was placed in winter quarters on January 12, and the work of inspection for repairs was begun. Extensive repairs were made to the hull, and in order to do this the steamer was placed on Hillyards blocks to examine and scrape the bottom and paint it. The steamer received a general overhauling, caulking and painting.

The machinery received a general overhauling, and was put in good condition. The main boiler, however, was found to be impaired, and consequently the steam pressure was reduced. Tenders will be invited for a new boiler to replace the old one, and this steamer will thus be made serviceable for several years.

The painting was carefully done outside, and the dardenelles, saloon, mess rooms, state rooms, berths and forecastle were painted with care. The steamer was taken off the blocks and taken to the ballast wharf and the work of repairs continued. The ship was put in commission on June 18, having been nearly five months undergoing repairs.

He first work was in connection with placing the bell boat at Partridge Island, and the buoy service was continued by changing the several automatic buoys in Yarmouth roads and elsewhere up to July 1.

'MINTO.'

The *Minto* is an iron steamer 225 feet long, 32.6 feet in breadth, 20.6 feet in depth, gross tonnage 1,089, net tonnage 371; indicated horse power 2,900, and nominal horse power 216. The steamer is commanded by Captain Andrew Finlayson, and has a crew of 39 in all.

The steamer *Minto* left Charlottetown on the 22nd June, 1901, for Quebec and took on board His Excellency the Governor General, Lady Minto and suite for a tour of the lower St. Lawrence, Gulf of St. Lawrence and the Maritime Provinces. The trip occupied until July 26. The steamer then returned to Charlottetown and was laid up for cleaning and repairs until August 31.

On the morning of the September 1 fire was discovered in the lower engine room space and it was found impossible to put out the fire without the aid of the City firemen. Considerable damage was done but men were immediately put to work and repairs made.

2-3 EDWARD VII., A. 1903

On September 12 the *Minto* left Charlottetown for Québec to assist in the reception of their Royal Highnesses the Duke and Duchess of York. The steamer returned to Charlottetown on September 24 and remained there until November 18 when her crew was shipped and the vessel sent to a coaling port.

The season was a very open one and the *Minto* did not enter upon the winter service until January 6, 1902, when the winter service was begun between Charlottetown and Pictou. One round trip was made but the ice in Hillsboro Bay and the Strait became so heavy that the Charlottetown-Pictou route was abandoned and the steamer was placed on the route between Georgetown and Pictou. The service between the two latter places was begun on January 10. The service was fairly regular until February 12, when the *Minto* was caught in heavy ice off the end of Pictou Island and remained fast until February 15. She was then able to get into Georgetown.

From February 18 until March 4 the steamer continued on the Georgetown-Pictou route and was then placed on the Charlottetown-Pictou route, making all the trips that it was possible to make.

The *Minto* made 51 round trips during the winter of 1901-02, she carried 1293 passengers, and handled 77,813 packages of merchandise, weighing 3,705 tons. Her gross earnings amounted to \$8,578.45. Mails were occasionally carried by the *Minto*, during the winter season, but the bulk of the mails were carried by the *Stanley* which was running between Summerside and Cape Tormentine during the winter.

The steamer was laid up on March 29, 1902. On May 5 the *Minto* was placed at the disposal of the Charlottetown Steam Navigation Co., while their two steamers were undergoing repairs at the marine slip at Pictou. The *Minto* was placed on the marine slip for cleaning and painting her bottom and repairs to plating on May 22 and on June 21 she returned to Charlottetown and was laid up at her berth.

'STANLEY.'

The *Stanley* is an iron steamer commanded by Captain Angus Brown, and has a crew of 36 in all. Her dimensions are: length 207 feet, breadth 32 feet, and depth of hold 19 feet, tonnage 914 gross, and 395 registered.

On June 24, 1901, the *Stanley* was placed at the wharf in Charlottetown to undergo repairs. The repairs consisted of taking out a condemned donkey boiler and supplying a new and improved one and installing a full service of electric light apparatus. The main boilers were overhauled and extensive repairs made to the machinery by Messrs. Bruce Stewart & Co. The engineers and some of the firemen assisted in the repairs. These repairs were completed with the exception of a new funnel for the donkey boiler on December 9.

The *Stanley* was sent to Pictou for coal and took in 300 tons with a view of beginning the winter service for the first time between Summerside and Cape Tormentine. The steamer *Northumberland* of the Steam Navigation Company, which plies between Summerside and Pointe du Chene, N.B., was able to continue her regular trips until January 3.

The *Stanley* was then put on the route for the purpose of carrying passengers, mail matter and freight, between Summerside and the mainland. Although the season was favourable the *Stanley* was unable to keep up her work regularly owing to the difficulty

SESSIONAL PAPER No. 21

of entering and clearing from Summerside Harbour. On the 3rd of February it was found necessary to cut the steamer out and about 100 men were employed for that purpose. On the 6th of the same month the steamer was out in the strait all night. On a trip made about the 19th February the steamer was caught in the ice and compelled to run to Charlottetown. She, however, returned to Summerside and continued her trips until the 2nd April, when she left Summerside for Charlottetown.

This service was experimental, and although not altogether satisfactory the work was done by the *Stanley* as well as could be expected.

The mails between Prince Edward Island and the mainland were principally conveyed by the *Stanley* making the usual ice boat mail service unnecessary. The steamer carried 982 passengers, which of course are included in the trips both ways, 14,552 packages of merchandise, principally small packages, were carried and her earnings amounted to \$2,699.20 for the season. The number of round trips between Summerside and Cape Tormentine was 54.

On April 15, the *Stanley* began the work of placing the automatic whistling buoys on the coast of Prince Edward Island and in the vicinity of Cape Tormentine, on the New Brunswick side. On May 6, the steamer was placed in the Nova Scotia agency for the purpose of supplying lighthouses and performing coast buoy service, and at the end of the fiscal year was still employed in the same work.

‘BRANT.’

The *Brant* is a wooden steamer 100 feet long over all, 19 feet in breadth, and 8 feet deep. Her tonnage is 141 gross and 57 net. She is commanded by Captain D. Mackinnon, and has a crew of 12 all told.

The steamer *Brant* was engaged in the lighthouse service of the Prince Edward Island Agency from July 2, 1901, to the 18th of that month, on which date she entered upon the Fisheries Protection Service.

She resumed the lighthouse service on August 14, and continued in it until December 31, conveying materials for the construction of lighthouses and supplying lights. In consequence of the openness of the season the steamer was engaged in this service until the end of the year.

All the crew were then paid off with the exception of the captain, chief and second engineers, one fireman and a watchman, and the steamer was put into winter quarters. During the time she was laid up the engineers and fireman took down, overhauled and set up the machinery. The steamer was also cleaned up and painted by the crew, beginning on April 1, 1902.

On April 15, the *Brant* entered upon the Fisheries Protection service and was engaged in it for a week; the work of conveying materials for repairs to lights, coal to fog-alarms and supplies to lighthouses was then taken up and the steamer was engaged in this service up to July 1.

The old propeller and rudder were taken off the *Brant* in June last and a new propeller and rudder supplied. It was found that the acid from the muntz metal bottom had eaten away the rudder frames.

2-3 EDWARD VII., A. 1903

'QUADRA.'

The *Quadra* is an iron steamer 174 feet long, 31·1 feet in breadth, and 13·6 feet in depth. Her gross tonnage is 573·30, and her registered tonnage 265·25. This steamer is commanded by Captain John T. Walbran, and has a crew of 21 all told.

During the month of July, 1901, the steamer *Quadra* landed material at Lawyer Island for the construction of a lighthouse on the northern island of the group and the steamer was employed also in making a survey of the Middle Passage, entrance to the Skeena River. In August a beacon was erected on White Islet, Strait of Georgia and lumber delivered at Carmanah for repairs at the station. Supplies were also taken to Discovery Island and Race Rocks for the light stations. The northern lighthouses were visited in September and the examination of the Middle Passage continued and finished. At the close of September and during the early days of October the *Quadra* joined the fleet on the Pacific Station and acted as one of the escort to the Duke and Duchess of York when visiting British Columbia.

The steamer during the month of October conveyed supplies to the Gulf lighthouses, placed a fairway buoy off Portier Pass and performed other buoy service. A party of Provincial Police was conveyed to Kingcome Inlet where several Indians were arrested for lawlessness, in the month of November. The *Quadra* also visited all the northern lighthouses during the same month.

During the month of December the steamer was employed in replacing buoys in Haro Straits and conveying material for repairs to Entrance Island station. On January 4, 1902, the steamer was put out of commission for her annual overhauling.

The *Quadra* was again placed in commission on March 10, and a tour of inspection of the light stations on the West Coast and Straits of Georgia was made and stores delivered. On her return to Victoria the Northern lighthouses were visited.

In April the ship was placed in the graving dock at Esquimalt for her annual cleaning and painting of bottom. The buoy service in the southern waters of British Columbia was then continued. In June a cruise was made along the West Coast in search of a missing sealing schooner named *Hatzie*. On the return of the steamer to Victoria she was sent to make a survey in Trincomali Channel for the rock upon which the s. s. *Victoria* struck. The rock was found and buoyed. The steamer was then engaged in establishing a magnetic range in Vancouver harbour and afterwards conveyed workmen and material to Cape Beale for making repairs to the lighthouse at that station. This completes the work of the *Quadra* up to July 1, 1902.

'DRUID'.

This is a new steamer built by Fleming & Ferguson, of Paisley, Scotland. The tender of the builders was \$110,960.00 but a change in the position of the boilers from three abreast to two abreast and one ahead, was deemed necessary for a better arrangement of space. This work made an additional cost of \$2,314.30 making the total cost of the steamer for hull and machinery \$113,274.30. This does not include the cost of furnishing the steamer nor the cost of inspection. The accounts for furnishing the boat have not been received up to date.

SESSIONAL PAPER No. 21

The dimensions of the *Druid* are as follows, viz.: length, 160 ft., breadth 30·1, depth in hold from tonnage deck to ceiling amidships 12·5 ft. Depth from top of deck at side amidships to bottom of keel 13·38 ft. Length of engine-room, 50·8 ft. The gross tonnage is 503·26 and the registered tonnage 148·55. Engines, triple expansion, two sets, diameter of cylinders 13", 21" and 34", length of stroke 34", steam working pressure 180 lbs.

This steamer was built for the purpose of taking the place of the old *Druid* which had been condemned as unfit for use. She will be employed in the Quebec agency, principally in connection with buoy service, placing and taking up automatic, gas and other buoys.

The *Druid* was launched at Paisley, on May 6, 1902, and sailed for Quebec on July 26. She arrived at Quebec on August 8, making the passage in 13 days, which is excellent time for a boat of her size. The steamer was immediately employed in the Quebec agency.

‘LADY LAURIER’.

The *Lady Laurier* is at present under construction at Paisley, Scotland, in the ship-building yard of Messrs. Fleming & Ferguson. The tender price of this steamer was \$184,983 but some changes have been made during construction and will increase the cost from \$5,000 to \$8,000. This does not include the furnishing of the steamer.

The crew has been selected and sent from Halifax to Glasgow to bring the steamer out. She is expected to arrive in Halifax during the month of December, and will be engaged in lighthouse and buoy service on the coast of Nova Scotia.

The length of the steamer is 210 feet, breadth 34 feet, depth moulded 18 feet. The *Lady Laurier* was launched on October 7, at Paisley, and the work of completion has been proceeding since that date.

This steamer is equipped with cable gear and will be employed by the Department of Public Works for repairing, when necessary, the cable between Halifax and Magdalen Islands.

‘SHAMROCK’.

The *Shamrock* is a steam barge 117 feet long, 25 feet in breadth and 9 feet 7 inches in depth. Her gross tonnage is 237 and her net tonnage 161. The *Shamrock* has a crew of 12 all told, including Mr. U. P. Boucher, buoy engineer, who is in charge of the steamer and directs her movements.

This steamer is employed in the buoy service between Montreal and Quebec on the St. Lawrence river; her captain is S. Sauvageau.

Owing to an accident to one of the cylinders of the *Shamrock*, the steamer was unable to proceed with the buoy service on the St. Lawrence river in the spring of 1902. The Department of Public Works kindly loaned the steamer *St. Francis* to take up the work of the *Shamrock*, and she was engaged in the work of placing buoys and lightships from April 11 to 13. On April 14, the *St. Francis* was replaced by the tug *St. Jean Irville* also belonging to the Public Works Department. This steamer was engaged in

2-3 EDWARD VII., A. 1903

the work of attending to the buoy service until May 17, by which time the service was in very good order.

The repairs to the *Shamrock* were completed on May 23, and on that date the steamer left Sorel and took up her regular work of maintaining the St. Lawrence river buoy service between Montreal and Quebec. The vessel was engaged in this service up to the end of the season of navigation.

'CONTEST'.

Owing to the sale of the D. G. S. *Druid*, in December, 1900, the ss. *Contest* was chartered to take her place in the Quebec agency. Captain Keonig late of the *Druid* was placed in charge. This steamer was engaged in the buoy service on the St. Lawrence river from May 16 to November 15, on which date she was handed over to the owners.

The *Contest* was again chartered on April 1, 1902, to be engaged in the buoy and lighthouse service on the St. Lawrence river. She was still engaged in this service at the end of the fiscal year.

'SCOUT.'

The *Scout* is a wooden steamer 84 feet long, 25 feet 6 in. in breadth and depth of hold 8 feet 2 inches, having twin screws operated by high pressure engines. Her tonnage is 173·40 gross and 94·03 registered. She is in charge of J. F. Fraser, buoy engineer.

The steamer *Scout* was transferred from the Department of Railways and Canals to the Department of Marine and Fisheries. The steamer had been employed in the canal stretches in tending buoys. As all the buoys which had been the property of the Railways and Canals Department were handed over to this Department, the service is now included in the division on the St. Lawrence river, between Montreal and Kingston.

Since the steamer was placed under the control of the Marine and Fisheries Department, a chart room and additional cabin accommodation were provided and the steamer otherwise altered for carrying out the work. This included the installation on board of a gas compressor and the supply of three gas holders of 260 cubic feet capacity each.

The crew of the steamer consists of twelve men all told.

'BAYFIELD.'

The *Bayfield* is a wooden steamer 110 feet long, 18 feet wide and 9 feet deep. The steamer was engaged in the hydrographic survey on Lake Superior during the season of 1902. Mr. W. J. Stewart is in charge of this work. Capt. A. M. McGregor, is the sailing master of the *Bayfield* and the crew consists of 19 men in addition.

OTHER STEAMERS.

The *Acadia*, *Petrel*, *Curlew* and *La Canadienne*, are engaged in fisheries protection work and reports concerning them will be found in the Fisheries Report of this depart-

SESSIONAL PAPER No. 21

ment. The steamer *Lord Stanley* was purchased in 1901 for hydrographic survey work but was loaned by the Public Works Department in the season of 1902.

STATEMENT showing cost of maintaining Dominion Steamers, Marine Branch, from 1884 to 1902.

Year.	Cost of Maintenance.	Year.	Cost of Maintenance.
	\$ cts.		\$ cts.
1883-84.	122,816 25	1893-94.	142,487 42
1884-85.	148,864 26	1894-95.	129,899 80
1885-86.	130,759 83	1895-96.	150,519 41
1886-87.	141,424 42	1896-97.	136,940 11
1887-88.	150,659 19	1897-98.	117,644 39
1888-89.	126,629 33	1898-99.	145,270 75
1889-90.	114,959 20	1899-1900.	180,975 45
1890-91.	111,437 03	1900-1901.	195,484 75
1891-92.	127,406 28	1901-1902.	241,060,98
1892-93.	146,521 77		

CERTIFICATES TO MASTERS AND MATES.

The report of Captain Bloomfield Douglas, R.N.R., Acting Chairman of the Board of Examiners of Masters and Mates, forms Appendix No. 13 of this report.

During the fiscal year ended June 30, 1902, the Board of Examiners of Masters and Mates held examinations at Halifax four times, at St. John six times, and at Quebec once, at Yarmouth seven times, making eighteen times in all. There were also eleven examinations held at Victoria, B.C., the papers and problems having been sent from Victoria to the chairman at Halifax for his inspection and confirmation.

At Halifax, one application was made for a foreign-going certificate of competency as master, and three for coasting and inland ; one foreign-going and three coasting and inland masters received certificates. Nine applications were made for foreign-going certificates of competency as mate, and three for coasting and inland : eight foreign-going and three coasting mates received certificates.

At St. John, six applications were made for foreign-going certificates of competency as master, and six foreign-going masters received certificates. Four applications were made for foreign-going certificates as mate ; and three mates received certificates. Four applications were made for coasting and inland certificates as master, and two as mate four coasting and inland masters received certificates, and two mates.

At Yarmouth, two applications were made for foreign-going certificates of competency as master and two foreign-going masters received certificates. Eight applications were made for foreign-going certificates as mate ; and eight mates received certificates.

At Victoria, B.C., three applications were made for foreign-going certificates of competency as master, and eight applications were made for foreign-going certificates as mate ; all received certificates.

2-3 EDWARD VII., A. 1903

At Quebec, one application was made for a foreign certificate of competency as mate ; one mate's foreign-going certificate of competency was issued.

In supplement No. 1 to this report will be found a list of all who have obtained certificates of competency or service, either as master or mate during the year ended June 30, 1902.

INLAND AND COASTING CERTIFICATES.

During the twelve months ended June 30, 1902, the number of candidates in the Dominion who have passed, and obtained masters' certificates of service was ten, and two mates' certificates of service have been issued ; the amount paid for these certificates was \$88.

The number of certificates of competency as master was two hundred and sixty-five as mate, one hundred and eight, and the amount paid for these certificates was \$4,623. The amount received for renewed certificates of competency and service was \$78, which with the amount paid for service certificates makes a total of \$4,789 received for masters' and mates' inland and coasting certificates issued during the twelve months ended June 30, 1902.

A list of certificates issued during the twelve months ended June 30, 1902, will be found in supplement No. 1 to this report.

The total amount of fees received on account of certificates of competency and service, sea-going, inland and coasting, during the fiscal year ended June 30, 1902, was \$5,298.52, and the amount in detail expended on account of the service as will be seen by reference to Appendix No. 1 to this report, was \$3,305.59, leaving a balance to this service of \$1,982.93. The vote for this service was \$5,000, and the sum expended to June 30, 1902, \$3,305.59, leaving an unexpended balance of \$1,694.41.

The following statement shows the total receipts and expenditure on account of masters and mates since 1871 :—

---	Expendi- ture.	Receipts.	---	Expendi- ture.	Receipts.
	\$ cts.	\$ cts.		\$ cts.	\$ cts.
For the fiscal year ended June 30, 1871.	1,410 45		For the fiscal year ended June 30, 1890.	4,117 83	2,186 00
" " 1872.	4,312 07	1,344 00	" " 1891.	4,255 24	2,586 00
" " 1873.	6,466 18	4,963 00	" " 1892.	4,363 88	2,194 00
" " 1874.	4,520 19	2,995 00	" " 1893.	4,116 99	2,484 00
" " 1875.	5,696 62	2,715 00	" " 1894.	3,721 33	2,907 04
" " 1876.	4,672 08	2,021 87	" " 1895.	3,758 29	3,974 50
" " 1877.	4,050 00	1,740 50	" " 1896.	4,062 82	2,307 50
" " 1878.	4,249 76	1,296 50	" " 1897.	3,536 29	3,754 00
" " 1879.	4 250 12	1,334 50	" " 1898.	3,335 40	4,800 00
" " 1880.	4,253 43	1,547 00	" " 1899.	3,568 26	4,486 50
" " 1881.	3,888 41	1,333 50	" " 1900.	3,750 69	4,221 50
" " 1882.	3,965 19	1,152 50	" " 1901.	3,730 25	4,808 24
" " 1883.	4,021 20	1,314 00	" " 1902.	3,305 59	5,288 52
" " 1884.	3,909 59	9,437 50			
" " 1885.	4,324 15	2,897 00	Expenditure.....	133,155 56	91,836 09
" " 1886.	5,245 28	2,152 00	Receipts.....	91,836 47	
" " 1887.	4,855 98	2,172 00			
" " 1888.	5,060 96	3,220 80	Excess of expenditure over receipts.....	41,319 09	
" " 1889.	4,381 04	2,202 00			

SESSIONAL PAPER No. 21

WRECKS AND CASUALTIES.

The total number of casualties to British and Canadian sea-going vessels reported to the department, as having occurred in Canadian waters and to Canadian sea-going vessels in waters other than those of Canada, during the twelve months ended June 30, 1902, was 222, representing a tonnage of 105,814 tons register, and the amount of loss both partial and total, to vessels and cargoes as far as ascertained was \$835,916. The number of casualties to inland vessels so far as have been reported were slight and unimportant.

The number of lives reported lost in connection with the casualties was 132. A statement of the wrecks and casualties will be found in supplement No. 1 to this report.

LIVE STOCK SHIPMENTS.

In last year's report the statements furnished by Messrs. George Pope and E. B. Morgan, inspectors of cattle shipments, Montreal, contained the total number of live stock shipped from the port of Montreal for the season of 1901. The returns for 1902 from these officers show a total shipment from Montreal for European ports to have been 77,156 cattle, an increase of 3,365 over 1901. The total number of sheep shipped during the season of 1902 was 45,830, a decrease from the shipments of 1901 of 8,708. The number of horses shipped from Montreal during 1902 was 549, a decrease of 789 for the year.

The cattle shipments from Montreal have fallen off considerably during the last two years from previous years. This is attributed to the shipment of Canadian cattle from United States ports to Europe.

While the shipments from Montreal to European ports have fallen off, they have increased at St. John, Halifax and Charlottetown. The shipments from St. John are principally made during winter months. From November, 1901, to July, 1902, both months inclusive, 11,614 cattle were shipped from St. John: sheep 6,858, and horses 6,374. The horses were shipped principally to South Africa. From Halifax, 162 cattle were shipped: from Charlottetown 195 cattle and 3,733 sheep and from Quebec 3,661 cattle and 3,407 sheep.

The total number of cattle shipped from the above ports to Europe was 92,788, and sheep 59,828. The total number of horses shipped to Europe and South Africa was 6,923. The above figures refer only to shipments inspected by the officers of the department.

The shipments in detail will be found in Appendix No. 6, in Part II of this report, and the total in another statement at the end of the report in Part II, page 147 as all the returns for the month of November were not received until after the cattle reports were in print.

METEOROLOGICAL SERVICE.

Two new stations were established in British Columbia, seven in the North-west Territories, three in Manitoba, five in Ontario.

2-3 EDWARD VII., A. 1903

There are now in the Dominion 323 stations using instruments which have been supplied by the Government : at 245 stations the observations are taken voluntarily.

The Departments of Agriculture in Ontario, Manitoba and British Columbia realize the importance of reliable meteorological data in connection with statistics of crops, acreage under cultivation, &c. Monthly charts containing notes on the leafing of trees and flowering of plants and other information are published.

In August, 1896, the publication of a daily weather chart was commenced, containing information gathered from meteorological observations taken each day at 8 a.m. This chart is displayed at Toronto at the Board of Trade, harbour master's office, and at some of the public schools. Private individuals obtain the chart, paying for it \$4 per annum.

Forecasts for the various districts lying between Manitoba and the Maritime Provinces, for twenty-four hours, are sent by telegraph to all points where morning newspapers are published. A second forecast covering the current and following day is sent to all ports, both on the great lakes and on the seaboard, it also appears in most of the afternoon papers published in the Dominion.

Reports from stations in the Canadian North-west Territories and Manitoba are collected at Winnipeg and wired in one message to Victoria, B.C.; reports from Barkerville, Cariboo Country, Kamloops and New Westminster are sent to Victoria at the same time as to Toronto.

Dawson, in the Yukon District, has been equipped as a telegraph reporting station, and daily reports are telegraphed to Toronto and Victoria. This station, together with Port Simpson, of the British Columbia coast, will be invaluable in forecasting for the North-west Territories, an extension of work which it is proposed to make as soon as possible.

The forecasts and storm warnings have been maintained during the year and 1,522 warnings were issued from Toronto, and of these 1,278 or 84.0 per cent were verified. The storm warnings are appreciated by mariners and the forecasts of weather have been considered valuable by forwarders.

Seismological observations have been made by keeping in operation the seismograph in Toronto and Victoria. The work in connection with the Magnetic Observatory at Toronto, as well as the other operations of the Meteorological Service, are recorded in detail in the report of Mr. R. F. Stupart, forming appendix No. 4, in Part II of this report.

SIGNAL SERVICE.

The reports of the Superintendent of the Signal Service at Quebec and Halifax, contain valuable information to mariners. Mr. J. U. Gregory is superintendent of this service at Quebec, and Lieut. R. M. McCrory of the Royal Engineers, at Halifax.

Arrangements have been completed between the government of Canada and the Society of Lloyd's, whereby the following signal stations, maintained by the Dominion of Canada, have been included in Lloyd's system of reporting stations. Orders forwarded to Lloyd's can be notified to vessels by means of these signal stations, on the same terms and conditions as observations at Lloyd's signal stations, and vessels signalling to these

SESSIONAL PAPER No. 21

Canadian signal stations, will be reported to Lloyd's for insertion in the Lloyd's List and Shipping Gazette, and daily press, in the same manner as reports from Lloyd's signal stations.

LIST OF STATIONS.

Belle Isle.	Chateau Bay.
Cape Ray, Newfoundland.	South-west Point, Anticosti.
St. Paul's Island, Cape Breton.	West Point “
Cape St. Lawrence.	Cape Rosier, Gaspé coast.
Heath Point, Anticosti.	Fame Point “
Amherst Island, Magdalen Islands.	Cape Magdalen “
Point Amour, Forteau.	South Point “

The Government telegraph system was during the season of 1901, extended along the north coast of the Gulf of St. Lawrence to the Strait of Belle Isle, and Belle Isle has been connected by cable with the shore telegraph system.

Arrangements have been completed by the Department of Marine and Fisheries whereby all inward bound vessels showing their official numbers will be reported from marine signal stations in the River and Gulf of St. Lawrence immediately, and all reports will be promptly posted on the bulletin board of the Great North Western Telegraph Company's office in St. Peter street, Quebec, and on that of the Board of Trade in Montreal.

Weather and ice reports will be forwarded twice a day, as formerly, and similarly posted.

Arrangements have also been made for repeating all reports received to the pilot station at Father Point, so that pilots will be promptly advised of the locality of inward bound vessels.

A telegraph station was established by the Government of Canada at the lighthouse at Point Amour and included in the list of marine signal stations from which reports will be posted at Quebec and Montreal.

Wireless telegraph stations have been established by the Marconi Wireless Telegraph Company (Ltd.) at Belle Isle and Chateau Bay and these stations have been included in the list of marine signal stations.

REMOVAL OF OBSTRUCTIONS TO NAVIGATION.

The sum of \$1,000 was appropriated by Parliament for the removal of obstructions to navigation. By reference to the statement of expenditure it will be seen that the sum of \$1,325.25 was expended for the fiscal year. A statement in detail will be found in the report of the Chief Engineer of this Department, under the heading of Removal of Obstructions. The expenditure is given in detail for the amount that has been expended during the calendar year, and therefore includes payments which have been made since the end of the fiscal year.

LIFE BOAT STATIONS.

There are 27 stations in the Dominion of Canada. Most of these have crews that drill twice or three times a month, in the majority of cases twice a month. The men are paid \$1.50 for each drill and an extra sum is paid when any service is rendered to shipwrecked mariners.

A new life-saving station was built at Long Point, near Port Rowan, Lake Erie. The building has a dining room, kitchen and sleeping apartments for the crew. A tramway was built from the boat-house to the water's edge, and a floating extension is attached to the tramway to allow the boat to be launched into the water from the tram-car. This apparatus works very satisfactorily. A new boat and equipment were supplied this station last year. The boat is a self-bailing surf boat, and has been reported a very satisfactory boat in a sea.

The crew at this station went to the assistance of the steamer *W. H. Stevens* of Buffalo, which was burned at Clear Creek on the night of September 7, 1902. After a long hard pull it was found that the crew of the steamer had already landed safely in their own boats, but the efforts of the crew were appreciated by the captain of the steamer.

Point Pelee.—The men at this station are employed three months in the fall of the year, having their quarters at the station. During the balance of the season of navigation they drill as at other stations, two or three times a month.

The life saving station at Point Pelee was removed from the extreme point of land about $\frac{1}{4}$ of a mile to a more secure place. The boat house which formerly rested upon the sand was placed upon cedar posts and a tramway was built to the water's edge upon which the boat is launched.

A new surf boat and equipment were supplied this station last season.

A new surf boat was also supplied the life-saving station at Goderich, and tenders were invited for the sale of the old boat.

Cobourg.—At Cobourg station, assistance was rendered the schooner *W. J. Suffell*, of Port Hope, on April 20, 1901. In trying to make Cobourg Harbour in a snow storm and heavy gale, the vessel missed the entrance and went to leeward of pier. The coxswain and crew of the life-boat went to her assistance and after seven hours' work managed to get lines to the pier and the vessel safely into the harbour.

Port Stanley.—At Port Stanley the schooner *Mineral State*, of Alpena, Mich., was wrecked about 200 yards from shore and south of the harbour, during a gale and heavy sea. The coxswain, J. R. Moore, and a volunteer life-boat crew, assisted by the tug *Gordon Brown* succeeded in rescuing the crew of five men who had been exposed for five hours. The coxswain and crew were granted \$5 each for their services.

Other services were rendered by life boat crews, but full reports have not been received, consequently the full account of the assistance rendered cannot at present be given. By referring to appendix No. 9 of Part II, a statement of the boats and life-saving stations will be found, also the kind of boat at each station, and the amounts paid the coxswains and crews.

SESSIONAL PAPER No. 21

The stations in the maritime provinces are inspected by Mr. Bloomfield Douglas, R.N.R.

The *Jessie Drummond* while approaching the wharf at Cobourg in a gale stranded about 300 yards from the wharf. The crew consisting of six men and the stewardess were all rescued by the life saving boat and landed on the wharf. The lives of the crew were no doubt saved by the efforts of the life saving crew, as the vessel broke up shortly after stranding.

TREE PLANTING ON SABLE ISLAND.

The report of 1901, contains a description of tree planting on Sable island. The object of the tree planting is to prevent the destruction of portions of the island by gales, and the sea changing the surface by washing away the soil and sand. .

Any system of protecting the coast by breakwaters is reported financially impracticable by the Chief Engineer, in view of the immense extent of coast line to be protected. The surface of Sable Island is covered with sand grass which to a certain extent prevents the shifting of the sand, but in all cases it has not an opportunity of taking root. The trees will be cultivated with a view of increasing the growth of the sand grass and also increasing the herbage on the island.

In conjunction with Professor Saunders, of the Experimental Farm, I purchased while in France, in 1900, some 82,000 trees. These trees were planted last year. Many deciduous trees were checked in their growth during the winter but most of them started into growth in the early spring of 1902. Unfortunately a northerly gale which occurred on the 6th June last, and exceeded 50 miles an hour, lasting for 36 hours, killed off all the new leaves and spring growth. The superintendent reports that he is of the opinion that very few will recover from this set back, but the coniferous trees consisting of Austrian Mountain and Maritime Pine have stood the winter well and have made a growth this spring, in some instances of 4 inches. The seedling pines have also stood the winter well. About 1,000 of these have recently been transplanted in clumps in the park. This park consists of an area about 8 acres and is used largely as a nursery.

COASTING TRADE OF CANADA.

By the provisions of chapter 83, Consolidated Statutes of Canada, being an Act respecting the Coasting Trade of Canada, no goods or passengers can be carried by water from one port in Canada to another except in British ships, but the Governor in Council may from time to time declare that the Act shall not apply to ships or vessels of any foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods and passengers from one port or place to another in such country. The Parliament of Canada was empowered to pass the Act alluded to under the provisions of the Imperial Act 32 Vic., chap. 11, intituled: An Act for amending the law relating to the Coasting Trade and Merchant Shipping in British Possessions, which came into operation in this country on its proclamation by the Governor General on October 23, 1869.

It was ascertained that the following countries, viz., Italy, Germany, the Netherlands, Sweden and Norway, Austro-Hungary, Denmark, Belgium and the Argentine

2-3 EDWARD VII., A. 1903

Republic allowed British ships or vessels to participate in their coasting trade on the same footing as their own national vessels;—the ships of Italy, by Order in Council of August 13, 1873; those of Germany, by Order in Council of May 14, 1874; those of the Netherlands, by Order in Council of September 9, 1874; those of Sweden and Norway, by Order in Council of November 5, 1874; those of Austro-Hungary, by Order in Council of June 1, 1876; those of Denmark, by Order in Council of January 25, 1877; those of Belgium, by Order in Council of September 30, 1879; and those of the Argentine Republic, by Order in Council of May 18, 1881, were admitted to the coasting trade of Canada.

The following Act entitled an Act respecting the Coasting trade of Canada, was assented to 15th May, 1902, and relates to the payment of duty on foreign built British ships.

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows :

1. In this Act, unless the context otherwise requires, the expression 'British ships' means and includes all ships belonging wholly to persons qualified or entitled to be owners of British ships, under the provisions of 'The Merchant Shipping Act, 1894,' or any other Act of the Parliament of the United Kingdom in that behalf, in force for the time being.

(2.) For all purposes of this Act the expression 'the coasting trade of Canada' shall be deemed to include the carriage by water of goods or passengers from one port or place in Canada to another port or place in Canada.

2. No foreign-built British ship, whether registered in Canada or elsewhere, shall be entitled to engage or take part in the coasting trade of Canada unless such foreign-built British ship has first obtained a license for that purpose, which may be granted by the Minister of Customs.

(2.) The Minister of Customs shall issue such license to any foreign-built British ship, whether registered in Canada or elsewhere, upon application therefor and upon the payment of a duty of twenty-five per cent ad valorem on the fair market value of the hull, rigging, machinery, boilers, furniture and appurtenances of such ship.

(3.) This section shall not apply to any foreign-built British ship registered as a British ship prior to the first day of September, 1902.

3. No goods or passengers shall be carried by water, from one port of Canada to another, except in British ships; and if any goods or passengers are so carried, as aforesaid, contrary to this Act, the master of the ship or vessel so carrying them shall incur a penalty of four hundred dollars; and any goods so carried shall be forfeited, as smuggled; and such ship or vessel may be detained by the collector of customs, at any port or place to which such goods or passengers are brought, until such penalty is paid, or security for the payment thereof given to his satisfaction, and until such goods are delivered up to him, to be dealt with as goods forfeited under the provisions of *The Customs Act*.

4. The master of any steam vessel, not being a British ship, engaged, or having been engaged, in towing any ship, vessel or raft, from one port or place in Canada to another, except in case of distress, shall incur a penalty of four hundred dollars; and such steam vessel may be detained by the collector of customs at any port or place to or in which such ship, vessel or raft is towed, until such penalty is paid.

SESSIONAL PAPER No. 21

5. Penalties and forfeitures under this Act may be recovered and enforced in the manner provided by *The Customs Act*, with respect to penalties and forfeitures incurred under it, and as if imposed by it ; and this Act shall accordingly be construed with reference to the said Act, and as forming one Act with it, and all words and expressions in this Act shall have the same meaning as the like words and expressions in the said Act.

6. The Governor in Council may, from time to time, declare that the foregoing provisions of this Act shall not apply to the ships or vessels of any foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods and passengers from one port or place to another in such country.

7. Where by treaty made before the passing of 'The Merchant Shipping (Colonial) Act, 1869,' (that is to say before the thirteenth day of May, eighteen hundred and sixty-nine,) Her late Majesty, Queen Victoria, agreed to grant to any ships of any foreign state any rights or privileges in respect of the coasting trade of Canada, those rights and privileges shall be enjoyed by those ships for so long as Her late Majesty agreed, or His Majesty the King may hereafter agree, to grant them.

8. Chapter 83 of the Revised Statutes is repealed.

9. This Act shall not come into force until His Majesty's pleasure thereon has been signified by publication in *The Canada Gazette*.

REPORT UPON CASUALTIES IN THE ST. LAWRENCE RIVER.

During the season of navigation just closed there have been eleven important casualties in the St. Lawrence river, viz.:—*Indiana*, *Rustington*, *Monteagle*, *Manchester Importer*, *Sahara*, *Manchester Engineer*, *Iberian*, *Loango*, *Edward Seymour*, *Bangor Head*, and *Sicilian*. Acting under instructions from the department, Commander O. G. V. Spain, commanding the Fisheries Protection Service of Canada, held a preliminary or informal inquiry in every case, the evidence being under oath. These reports are annexed.

The British Board of Trade, London, England, were advised of the Minister's decision to hold an inquiry in future into every casualty occurring in the St. Lawrence and its approaches, and were asked to co-operate with the department in this matter. They have kindly consented, whenever it is possible to do so, to order an inquiry in England into any casualty in these waters that may have escaped inquiry in Canada. Under this arrangement they have taken steps to inquire into the cases of the *Sahara* and *Monteagle*.

There appears to be, I regret to say, a certain amount of indifference in regard to these inquiries on the part of some ship owners when the conduct of their own officers is involved. The present discrimination against Canada in marine insurance rates is mainly, if not wholly, the result of the opinion entertained by underwriters in England that the accidents which occur from time to time in Canadian waters are owing to the dangerous navigation of the route. It is the policy of the department to demonstrate that this view is erroneous, and that it is only the inexperienced or careless captain or pilot who wrecks his ship. Under these circumstances it is not too much to expect that those who are engaged in the shipping trade, and whose interests are injuriously affected by the present condition of affairs, will assist the department in every possible manner when these inquiries are ordered.

2-3 EDWARD VII., A. 1903

The investigations this season have shown that the strandings in the St. Lawrence are not owing to the dangers of the route, or to the want of proper and efficient aids to navigation, and nowhere is this fact more apparent than in the inquiries held by order of the Board of Trade, during the past five years, into the casualties in the approaches to the St. Lawrence, including the coast of Newfoundland. The following precis of these cases cannot fail to be of interest. It will be noticed that in all but two instances the captain was found in fault, and either his certificate was suspended or he was reprimanded.

‘GANGES.’

Montreal to Aberdeen, via Newcastle, general cargo and cattle, September 13, 1898.

This vessel was stranded off Ferolle Point, Newfoundland, on October 3, 1898. Court found that loss of vessel was due to her not having made good the courses set and steered on October 3, but that no default had been proven against master or any of the officers.

‘SCOTTISH KING.’

Antwerp for Boston and Baltimore, general cargo, November 20, 1898.

This vessel was stranded near Seal Cove, Newfoundland, on November 30, 1898. Court found that the wreck of the vessel was caused by her not making good courses, which were set too fine for passing Cape Race, and that she was navigated at too great a speed in thick weather, the master being ignorant of his position, which he had taken no steps to verify. The captain's certificate suspended for three months.

‘PRODANO.’

Baltimore to Leith, general cargo, September 24, 1899.

This vessel was stranded at or near Wild Cove, St. Mary's Bay, Newfoundland, on October 1, 1899. Court found that the cause of the casualty was that the vessel was set to the northward of her course by a strong current, and that the master or any of the officers was not in default for such stranding.

‘BAY STATE.’

Liverpool, G. B., for Boston, general cargo, September 25, 1899.

This vessel was stranded near Cape Ballard, south-east coast of Newfoundland, on October 3, 1899. The court found that the casualty was due to the vessel not having made good the course steered, but that the loss of the vessel might have been avoided had the chief officer carried out his instructions, and the court, although refraining from dealing with his certificate, considered him deserving of very severe censure.

‘MAREOTIS.’

Quebec and Liverpool, cargo of lumber and deal ends, June 23, 1900.

SESSIONAL PAPER No. 21

This vessel was stranded near Codroy, Newfoundland, on June 25, in dense fog. Court found loss of vessel due to the default of master, and although his certificate was not dealt with, the court strongly censured him for not reducing the speed of the vessel earlier.

‘CREWE.’

Sydney, C. B., to Bell Island, Conception Bay, Newfoundland, in ballast, May 16, 1901.

This vessel was lost on the west side of St. Shot's Cove, Newfoundland, on the 17th May, 1901. Court found that loss of vessel was caused through master neglecting to make sufficient allowance for the prevailing current to the northward, failing to take frequent soundings, and navigating at too great a rate of speed in thick weather. His certificate was suspended for six months.

‘ASSYRIAN.’

Antwerp to Montreal, general cargo, May 26, 1901.

This vessel was stranded in dense fog on the coast of Newfoundland, about one mile north of Cape Race, on June 5. Fog signal at Cape Race was heard sounding for an hour before the vessel went ashore, but at the time it was considered to be the fog signal from a steam vessel. Court found that loss of vessel was due to incautious navigation of master, and suspended his certificate for three months.

‘DELMAR.’

Dundee to Mobile, Gulf of Mexico, in water ballast, June 28, 1901.

This vessel was stranded about 13 miles north of Cape Race, Newfoundland, on or about 8th July, 1901, in a dense fog. Court found that vessel was navigated at too great a rate of speed; no proper look-out was kept; lead was not used at any time before the stranding, which neglect in the opinion of the court was wholly unjustifiable; that the casualty was caused by careless and negligent navigation on part of the master, and that the vessel was navigated neither with proper nor seamanlike care. Certificate suspended for six months, but on application of master court recommended that he be granted a chief mate's certificate during such period of suspension. The second officer was also censured. Court also made the following observation:—

‘He (the captain) had plenty of searoom to the southward and westward, he was bound to a port two thousand miles distant, and why, in an uncertain position in thick weather and where irregular currents abound, he should attempt to make a point requiring the greatest care, rather than take a course which was comparatively safe, the court is at a loss to conceive.’

‘ACIS.’

Galveston, U.S.A., to Hamburg, general cargo, July 20, 1901.

Vessel enveloped more or less in fog for two days before stranding. Court found that loss of vessel was due to the lead not being sufficiently used when the vessel was approaching Cape Race in thick weather. Master's certificate suspended for six months.

2-3 EDWARD VII., A. 1903

Court expressed the following opinion :—

‘It is also unaccountable why the master should continue steering for some hours during a dense fog in the direction of a dangerous coast when he had the whole of the ocean clear before him.’

CONDENSED REPORT ON CASUALTIES TO STEAMSHIPS ‘INDIANA,’
‘RUSTINGTON,’ ‘MONTEAGLE,’ ‘MANCHESTER IM-
PORTER,’ ‘SAHARA.’

QUEBEC, P.Q., September 23, 1902.

SIR,—As the result of the commission appointed by the Honourable James Sutherland, Minister of Marine and Fisheries, dated August 30, 1902, we, the undersigned, commissioner and nautical assessors, respectfully condense our findings in the five cases dealt with, and report :—

(For full particulars see reports attached.)

(1) These five casualties were not caused by any inefficiencies or deficiencies in ‘Aids to Navigation’ on board any of the steamships.

(2) These five casualties were not caused—not a complaint being heard or reported of any one light, fog signal or buoy—by any inefficiencies or deficiencies in the ‘Aids to Navigation’ on the route of the River and Gulf of St. Lawrence.

(3) These five casualties were caused by the inexperience or carelessness of some one or more of the captains, or officers, or pilots.

We recommend that owners only employ careful, experienced captains and officers: and also that the pilotage system of the St. Lawrence be put under government control.

We have the honour to be, sir,

Your obedient servants,

(Sd.) O. G. V. SPAIN,
Commissioner.

Assessors :

(Sd.) R. S. CLIFT,
Master Mariner and Marine Surveyor.

(Sd.) W. SIMONS,
Naval Architect, Port Warden.

Lieut-Col. F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

QUEBEC, P.Q., September 10, 1902.

SIR,—

Re ‘INDIANA’ INVESTIGATION.

In the case of the *Indiana* the whole proceedings from the time the captain of this vessel sighted land on our side on the way out, seem to have been most ex-

SESSIONAL PAPER No. 21

traordinary. In the first place, he sighted land, from what we can make out, somewhere about Scattarie on the Cape Breton coast, but from his position as placed by him on the chart and shown in his log, he should have been sixty (60) miles or thereabouts to the northeast, but he cannot give us any definite information exactly where he was.

The next place he sighted was St. Paul's Island, from which he says his distance was about five (5) miles. When asked how he knew this, he said it was simply a guess, and that he took no bearings whatever. After this, instead of shaping his course to pass about the same distance from Bird Rocks, he steered a course which brought Bryon Island ahead: then he had occasion to alter his course to the northward to take him outside of the Bird Rocks. After sighting these rocks, north of the Magdalens, the same thing happened, and no bearings or distances were taken from the lighthouse.

He then found himself off what he considered the Gaspé coast, but he was not sure about it. Cape Chatte was then sighted, but he was not sure about his distance from this place.

On the way eastward after loading in Montreal (the pilot left him as usual at Father Point) he ran a certain number of courses but he knows absolutely nothing about the deviation of his compass on any of them. This was the first time he was sailing the easterly courses, but instead of remaining on deck this particular night (June 24 last) which was fine, and watching the courses and lights and endeavouring to find out the difference between the courses made good and the courses steered, he took no means whatever to ascertain the error of his compass, although the pilot apparently did so and informed him that there was about one point of westerly deviation on his easterly courses; but the captain has no record of any deviation on easterly courses either in his scrap-log, the mate's log or the deviation book.

He was using a chart of a very small scale and told us that it was the best one he had, but upon going on board the ship on Saturday morning, the 6th instant, we found that he had a drawer-full of the most recent charts on a large scale, with the exception of the one from the Saguenay to the western end of Anticosti, which latter covers the ground over which the vessel went from Father Point to the place she went ashore near Mingan. We also found that he was not provided with sailing directions or a pilot book for the Gulf and River St. Lawrence: otherwise, the necessary aids to navigation on board the vessel were complete. The captain informed us that the owners had given him *carte-blanche* to order anything he considered requisite before leaving England.

On measuring off his lead line it was found it was considerably in error.

It was quite impossible either for the court or the captain, or his chief officer to lay down on the chart the courses and distances steered as the captain acknowledged that the entries in the log-book which he produced, with regard to these items were not to be depended upon and, as a matter of fact, when the captain and chief officer attempted to lay down these courses according to this book they went, in many cases, over the land.

When asked to point out the position that he thought the vessel was at 5.30 a.m., before the time of stranding on June 26 last, he indicated a position which was some seventy (70) miles to the southward.

2-3 EDWARD VII., A. 1903

On the eastward passage, he left Father Point at 8.30 a.m., and according to the gulf reports and also the evidence of the captain of the *King Edward* who passed down the river at the same time, the weather was clear, and vessels were reported passing various points both a.m. and p.m. on that day.

After carefully considering the whole case and examining all the witnesses possible, we find :

1. That the owners having given Captain Furneaux *carte-blanche* are not blamable for any inefficiencies or deficiencies in the 'Aids to Navigation' on board the steamer.

2. That this casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' in the route of the Gulf and River St. Lawrence.

3. That Captain Furneaux was guilty of almost criminal carelessness in his navigation of the vessel and in neglecting to ascertain the deviation of the compass on easterly courses, and in using an inefficient chart, and in neither having nor reading sailing directions or pilot book for the St. Lawrence.

4. Regarding the charges of drunkenness against the captain and officers ; from the evidence of the witnesses examined, these charges have not been substantiated.

We therefore recommend that a formal investigation should be held into the case of the stranding of this vessel as soon as possible.

We have the honour to be, sir,

Your obedient servants,

(Sgd.) O. G. V. SPAIN,
Commissioner.

Assessors :

(Sgd.) R. S. CLIFT,
Master Mariner and Marine Surveyor.

(Sgd.) W. SIMONS,
Naval Architect, Port Warden.

Lieut. Colonel F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

QUEBEC, P.Q., September 11, 1902.

SIR,—

Re SS. 'RUSTINGTON' INQUIRY.

In reference to the informal investigation into the cause of the stranding of the ss. *Rustington* : Captain Burnett commanding, on Barnaby Island, on August 1, last, we have, in the absence of the captain, officers and crew, only been able to obtain the evidence of parties who were not on board the vessel at the time of the casualty, also reports from the gulf in reference to the weather, the captain's notarial protest, together with the wreck register No. 19,003.

SESSIONAL PAPER No. 21

On or about July 20 last, the *Rustington* sailed from Fleetwood, Great Britain, in water ballast bound for the River St. Lawrence, and on this voyage all her courses would naturally be to the westward. On arriving in the St. Lawrence she called at Matane for orders on the 1st day of August last, and received them that day to proceed to Batiscan, above Quebec, to load. On the evening of the same day, during a fog, she was two to three miles off Bicquette by the sound of the fog-horn, waiting for a pilot; (in the Captain's own words) 'Being fog and unable to obtain pilot at Bic Island, turned round eastward; position at the time 2 to 3 miles off Bic (?) lighthouse (presumably Bicquette) by sound of horn. Set course E. by N. magnetic E. $\frac{3}{4}$ N. This course should have taken ship at least 8 miles off Rimouski Island.'

(?) The Captain altered his course to E. $\frac{3}{4}$ N. magnetic, fog still continuing, and proceeded down the river again and ran shore on the west end of Barnaby Island about twelve miles from Bicquette at 11.30 p.m., on the same day.

The vessel jumped up about 18 inches forward, showing that she was going at a fair rate of speed and her head was about south-east. She remained there until August 4, on which date Davie's wrecking appliances arrived and she was floated at 2 o'clock p.m., on that day, taken to Quebec and repaired. Loaded with spruce deals and sailed from that port on August 30, bound direct for Bristol, Great Britain.

We are of the following opinion:—

That the vessel was in a safe position, two to three miles off Bicquette Island.

We are unable to understand why the captain proceeded on easterly courses, evidently not knowing the deviation of his compass on these courses, to pass eight miles (to quote his own words) 'outside Rimouski Island'—wherever this may be. His compass must, if he steered the course he reports, have had considerable easterly deviation.

The ship went over a part of the river where there are good soundings and anchorage, and we cannot understand why he did not sound and anchor as he approached the land. It is a well known fact that a vessel steering for some weeks on westerly courses and then suddenly changed to the eastward, her courses steered cannot be relied upon, and especially in the vicinity of land.

After careful consideration of the matter and having heard expert evidence as far as possible, we have come to the following conclusion:—

1. So far as we have been able to ascertain, the casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' on board the vessel.

2. That the casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' in the route of the River St. Lawrence.

3. That the casualty was caused by the master unwisely steering from a safe position off Bicquette on an E. $\frac{3}{4}$ N. course, apparently not knowing the deviation of his compass on easterly courses, and ran ashore on the west end of Barnaby Island approximately twelve (12) miles away; off which remarkably good and reliable soundings and anchorage may be obtained for many miles. It is also very evident that he must have entirely neglected the use of his lead.

4. We have been unable to obtain any evidence as to the master's past record.

2-3 EDWARD VII., A. 1903

Taking all these facts into consideration we respectfully recommend that a formal investigation be held into the case of this vessel as soon as possible.

We have the honour to be, sir,

Your obedient servants,

(Sgd.) O. G. V. SPAIN,
Commissioner.

Assessors :—

(Sgd.) R. S. CLIFT,
Master Mariner and Marine Surveyor.

(Sgd.) W. SIMONS,
Naval Architect, Port Warden.

Lieut. Colonel F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa, Ontario.

QUEBEC, September 22, 1902.

SIR,—

Re SS. MANCHESTER IMPORTER.

In the investigation into the cause of the casualty to the ss. *Manchester Importer*, we ascertained the following facts :—

The steamer loaded a general cargo at Montreal, and sailed from there under the command of Captain Frederick Dundas, on the morning of August 22, and in passing Quebec at 7 o'clock p.m., of the same day, changed pilots, taking Alphonse Asselin as pilot for the Lower St. Lawrence. The ship experienced fine clear weather, passing through the Traverse at 12.30 a.m., of the 23rd., and passed Cape Salmon at 3.25 a.m., weather getting hazy, and ran ashore going full speed on the north side of White Island reef, at 4.45 a.m., same day, with weather heavy, light wind and smooth water ; remaining hard and fast, making water in Nos. 1 and 2 tanks and No. 1 hold. Assistance arrived from Quebec she was lightened and got off on August 26, taken to Quebec, repaired, re-loaded and sailed again on September 6.

The Harbour Commissioners of Quebec held an inquiry into the conduct of the pilot and courteously allowed us to be present and ask any questions we thought proper—*vide* report attached.

At the inquiry into the casualty to the ss. *Rustington* we examined Mr. Morin, President of the Pilots' Corporation, and Captain Gibson of the ss. *Kingstonian*, and as this is only a preliminary inquiry, we duplicate the evidence of these two gentlemen.

We also examined Captain W. F. Slayter, R.N., of H.M.S. *Ariadne* ; and visited the ss. *Manchester Importer*, examining very fully all the 'aids to navigation' on board, and we arrive at the following conclusion :—

The steamer left Montreal well found in 'aids to navigation', &c., at Quebec took on board Alphonse Asselin, pilot, and passed in clear weather through the Traverse at 12.30 a.m., under his charge, with the captain in bed, who left orders to be called if weather changed. At 3.25 o'clock a.m., when off Cape Salmon, the pilot sent the 2nd

SESSIONAL PAPER No. 21

mate to call the captain to tell him the weather was getting hazy, but he remained in bed ; vessel proceeding full speed. At 4 a.m., the chief mate relieved the 2nd mate on the bridge ; weather getting thicker. At 4.25 a.m., the fog signal on White Island light-vessel was heard distinctly on the starboard bow ; the pilot ported the helm and vessel ran ashore on White Island reef, at full speed.

We are informed that the pilot has been suspended for six months, but as the greater part of that time there is no navigation in the river St. Lawrence, and the monetary loss is partly replaced by his confrères subscribing a sum of money for his benefit, it is tantamount to giving him a holiday.

We consider it the duty of a captain to be on the bridge day or night when going through narrow waters such as the Traverse and the North Channel, and we are of opinion that if Captain Dundas had been on the bridge after passing Cape Salmon, the casualty would not have occurred, but we attribute his imprudent confidence in his pilot to his inexperience in the trade, he having been here only twice before ; and consider that owners should only put experienced captains and officers on steamers in this trade.

After reviewing the whole facts of the case we find :—

(1.) The casualty was not caused by any inefficiencies or deficiencies in ‘ Aids to Navigation ’ on board the steamer.

(2.) The casualty was not caused by any inefficiencies or deficiencies in the ‘ Aids to Navigation ’ in the route of the River and Gulf of St. Lawrence.

(3.) The casualty was caused by an error of judgment on the part of the pilot and the inexperience of the master in the navigation of the St. Lawrence.

N.B.—(4.) We consider that the punishment of the pilot is inadequate, and that the pilotage of the River St. Lawrence should be under the control of the government, and that pilots be examined and tried by competent experts, and when suspended should be kept going up and down the river on steamers.

We recommend that as the pilot has been suspended no further inquiry be held, but that copies of the above be sent to the owners, and the British Board of Trade.

We have the honour to be, sir,
Your obedient servants,

(Sgd) O. G. V. SPAIN,
Commissioner.

Assessors :

(Sgd.) R. S. CLIFT,
Master Mariner and Marine Surveyor.

(Sgd.) W. SIMONS,
Naval Architect, Port Warden.

2-3 EDWARD VII., A. 1903

Lieut.-Col., F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

QUEBEC, P.Q., September 23, 1902.

SIR,—

Re SS. 'SAHARA'

In the investigation into the cause of the casualty to the ss. *Sahara*, we ascertained the following facts :—

This steamer loaded a cargo of rice at Rangoon, and sailed on April 12, 1902, for Montreal, under the command of Captain William Cave ; nothing occurring until 7.45 a.m. on June 10, when the vessel off Father Point, failed to get a pilot, and weather getting foggy proceeded at 7.55 a.m., for Bicquette pilot grounds. Noon, dense fog : 1.30 anchored two miles west of Barnaby Island in seven fathoms. At 2.30 p.m., fog clearing, proceeded : 3.45 p.m., made out Bicquette Island ; 4.13 p.m., proceeded slowly, signalling for pilot. At 4.30 p.m., Bicquette Island abeam $1\frac{1}{2}$ mile ; seeing no pilot schooner steamed into the southward, fog at the time setting in ; 5.16 p.m., anchored in seven fathoms, fog continuing. At 5.55 fog clearing, a pilot schooner was seen bearing W.N.W., weighed anchor and steamed towards the pilot schooner ; stopped to take the pilot from the schooner's boat, and the steamer drifted on to the South-west reef of Bicquette Island, partly filling Nos. 1, 2, and 3 holds, and the crew all went ashore as the vessel taking a heavy list to port it was thought it would capsize. Assistance being obtained from Quebec, vessel got off at 11.40 p.m., of June 17, and proceeded to Montreal, discharged there and went to Quebec where she was repaired and loaded a cargo of lumber for the United Kingdom.

After carefully examining the captain's extended protest and wreck report ; and weather reports for the River and Gulf of St. Lawrence for June 10 ; also having heard the evidence of Captain Davie and Pilot Joseph V. Gourdeau, we have come to the following conclusion :—

That the vessel sailed from Rangoon well found in 'Aids to Navigation' &c., and was carefully navigated till she arrived off Father Point, where the master showed undue haste in only remaining ten minutes for the pilot who was waiting for him there ; he, however, seems to have carefully navigated his vessel, taking frequent soundings and anchoring once, and then again anchoring above and inside Bicquette Island looking for the pilot schooner ; weather on clearing, he saw the pilot schooner at anchor to the west-north-west. As it was calm the schooner could not get under weigh and he got the steamer under weigh to meet the boat containing Pilot Gourdeau which the pilot schooner was sending. As he neared the boat he stopped his engines and did not notice the strong ebb tide which, in the first half, sets to the north-east, setting him directly on to the south-west reef, and not parallel to the shore, consequently, just before the pilot got to the steamer she struck on Bicquette south-west reef and sustained much damage to hull and cargo. The captain and officers seem to have worked heartily in conjunction with the assistance sent from Quebec.

As Bic Islands and Bicquette lighthouses were plainly in view, we must attribute the casualty to the captain's impulsive imprudence and to his inexperience in the trade

SESSIONAL PAPER No. 21

in not knowing the set of the first half of the ebb tide, and his undue haste in not waiting at Father Point for his pilot.

After carefully reviewing the whole facts of the case we find :—

(1.) This casualty was not caused by any inefficiencies or deficiencies in ‘Aids to Navigation’ on board the steamer.

(2.) This casualty was not caused by any inefficiencies or deficiencies in the ‘Aids to Navigation’ on the route of the River and Gulf of St. Lawrence.

(3.) This casualty was caused by the imprudence of the captain in too hastily leaving Father Point, and lack of experience in not knowing the set of the tides in the vicinity of Bic Island.

We therefore recommend that a formal inquiry be held into the cause of this casualty.

We have the honour to be, sir,

Your obedient servant,

(Sgd.) O. G. V. SPAIN,
Commissioner.

Assessors :

(Sgd.) R. S. CLIFF,
Master Mariner and Marine Surveyor.

(Sgd.) W. SIMONS,
Naval Architect, Port Warden.

Lieut.-Colonel F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

QUEBEC, P. Q., 23rd September, 1902.

SIR,—

Re SS. ‘MONTEAGLE.’

In the investigation into the cause of the casualty to the ss. *Monteagle* we have ascertained the following facts :—

The steamer loaded a general cargo at Bristol and sailed July 2, for Montreal, under command of Captain W. L. D. Chapman, R.N.R., experienced several days of foggy weather, passing Cape Ray at 8.09 a.m., on July 11, fine clear weather, and Bird Rocks at 1.33 p.m., same day; Gaspé light at 1 a.m., July 12; Rosier light at 1.21 a.m., and at 2.35 a.m., ran ashore on Serpent Reef, 7½ miles east of Fame Point, filling Nos. 1 and 2 holds, vessel going full speed and fine clear weather—*vide* Captain’s extended protest and extract from log. Assistance being obtained from Quebec and Montreal, vessel got off at 11.50 p.m., on July 17, proceeded to Montreal, discharged cargo and sailed for New York to be repaired, where she now lies.

After going fully into the evidence of Captain Chapman and Pilot St. Laurent, and examining the weather reports for July 10 and 11, we arrive at the following conclusion :

The steamer left Bristol well found in ‘Aids to Navigation,’ &c., had varying weather across the Atlantic and experienced several days of foggy weather in which

2-3 EDWARD VII., A. 1903

she had been carefully navigated, passing Cape Ray, Bird Rocks and Gaspé, the latter at 1 a.m., with the 2nd mate on the bridge. Tomlinson, quartermaster, took the wheel at 2 a.m., by the courses steered the vessel was at a safe distance and at 2.25 a.m. the captain altered the course to north 51 west true, which would be north 22 west magnetic, which should take her further off the land. We are of opinion that the 2nd mate must have altered this course to almost straight ashore, as she struck at 2.35, breaking day; houses on shore visible and Fame Point light clear and distinct.

When the captain showed the second mate Fame Point lighthouse 8" on the port bow at 1.35 a.m., it would have been impossible for the vessel to have arrived at Serpent Reef except the light had been brought on the starboard bow. If the captain had given a course to take the ship ashore, the night was so fine, the land so bold and visible, that the second mate should have put her head off and called the master.

In view of the past record of the second mate, we can only conclude that he was to blame for the casualty.

The master and officers, after the stranding, seem to have made vigorous and successful efforts, in conjunction with the assistance sent, to float the vessel.

From the records of the gulf and river reports for July 10 and 11, we find there is no foundation for the belief that there was any abnormal current on the night of the 11th, and we find that the buoy on Serpent Reef which was washed away previous to that date, would not have prevented the casualty had it been in its place. We find that the buoy has since been replaced.

The second mate having been discharged in New York some time ago, it is impossible to examine him, but we consider that after the complaint of the captain in regard to a previous casualty on the west coast of Africa, the owners should have relieved him (the captain) of this officer.

After reviewing the whole facts of the case we find :—

(1.) The casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' on board the ss. *Monteagle*.

(2.) The casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' on the route of the River and Gulf of St. Lawrence.

(3.) This casualty was caused by the lack of seamanship and judgment displayed by the second mate in either steering the vessel ashore, or not altering his course when he saw the vessel approaching the land.

We therefore recommend that a formal investigation be held into the case of the stranding of this steamer.

We have the honour to be, sir,

Your obedient servants,

(Sgd.) O. G. V. SPAIN,

Commissioner.

Assessors :

(Sgd.) R. S. CLIFT,

Master Mariner and Marine Surveyor.

(Sgd.) W. SIMONS,

Naval Architect, Port Warden.

SESSIONAL PAPER No. 21

SS. 'MANCHESTER ENGINEER.'

In the investigation into the cause of the casualty to this vessel, the following facts were ascertained :—

On her last trip inwards she came by the Straits of Belle Isle : the master laid off the course of his ship from the South point, Anticosti, so as to pass Fame point, three miles off. When the vessel arrived in the vicinity of Fame point at 10.15 a.m., on October 15, 1902, the weather being perfectly clear, with a rather strong north-west wind, she was steering north-west by west, and a black buoy was observed on the port quarter, which evidently must have been Fox River buoy, but which the master mistook for Serpent reef buoy. About one-half an hour after sighting this first buoy, another black buoy was observed right ahead ; the master, for some reason best known to himself, took this for a buoy adrift, and passed it about a cable's length off his starboard side, and five minutes afterwards the ship struck.

This disaster was entirely due to a very grave error in judgment on the part of the captain of the ship, which he himself acknowledges.

I respectfully recommend that a formal inquiry be held into the causes which led to the stranding of this vessel.

SS. 'LOANGO.'

This vessel, on November 6 last, on her way from Three Rivers to Quebec, grounded at 7.30 p.m. on Cap Rouge point. The *Loango* was wholly in charge of the pilot at the time of the casualty, he himself being at the wheel and steering the ship with his own hands. It was a very dirty night and drizzling rain.

I attribute the grounding of the *Loango* to the over-confidence of Pilot Frenette in considering that he was capable of steering the vessel on such a dark night : if the ship had come to anchor, the casualty, no doubt, could have been avoided.

As the vessel, at the time of the accident, was entirely under the guidance of Pilot Alfred Frenette, who has had his certificate suspended, I consider that a formal inquiry is not necessary.

SS. 'BANGORE HEAD.'

This vessel left Swansea, South Wales, on October 31, 1902, with a cargo of coal, and had very bad weather nearly the whole way out. They passed Bird Rocks about 14 miles off, saw Cape Gaspé, and all the lights right along, and bearings were taken in nearly every case, the last taken being at Cape Chat, and various courses were steered along the land. Matane light was bearing west $\frac{3}{4}$ south by compass, and Ste. Felicité was bearing south-east $\frac{1}{2}$ east by compass just before the ship struck ; the log showed 34 miles from Cape Chat, and the depth of water was 7 fathoms immediately after she struck. The *Bangore Head* was drawing 22 ft. 11 $\frac{1}{2}$ in. aft, and 22 ft. 4 in. forward, on leaving England.

The master claims that she struck either a sunken wreck, or a boulder that had been carried down by the ice. I am, however, of the opinion that the vessel was too close into the south shore.

2-3 EDWARD VII., A. 1903

In view of the 'Notice to Mariners,' issued by this department on May 6, 1902, in which masters of vessels are strongly warned (copy attached hereto) to make full allowance for strong downward current, and especially in thick weather, to give the south shore a good berth, which may easily be done, as the estuary is clear and open for a width of 25 miles, as far up as Bic Island. Hugging the south shore is only incurring unnecessary risk for the saving of a little time. Constant use of the lead in thick weather is also urged.

I consider this a case for a formal inquiry.

DOMINION OF CANADA.

NOTICE TO MARINERS.

No. 31 of 1902.

(ATLANTIC NOTICE No. 18.)

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

QUEBEC.

(119) Lower St. Lawrence—Gaspé coast—Allowance for downward current.

Several vessels have stranded during past seasons in the neighbourhood of Matane, and these vessels have invariably been inward bound. Inquiries made on the spot by the chief engineer of this department, together with examination of the logs of some of the stranded vessels, show that most, if not all, of these accidents have been caused by want of allowance for the very strong downward set of current on that part of the Gaspé coast. The officers navigating the vessels have changed their courses to port, on the assumption that they were above Matane, when in reality they were several miles farther east than their reckonings.

Mariners are reminded that the current is invariably down stream, both with the ebb and flood tides; and as such a current always strengthens during the ebb, it seems possible that at certain times its strength may be greater than is stated on the Admiralty charts. The indications which they give, together with some additional information secured by the tidal survey in this department, may be summarized as follows:—

From the mouth of the Saguenay to Cape Chat, the charts show a constant current, always down. (See charts 309 and 312; Cape Chat to Bic Island, and Bersimis to Saguenay.) This current occupies more than half the width of the river on the southern side. Its strength is stated to be from $1\frac{1}{2}$ to $2\frac{1}{2}$ knots. There is a weak flood in the opposite direction close in-shore, but it keeps closer in than vessels usually venture to go.

This current continues to follow the south shore as far as Cape Gaspé, where it leaves the mouth of the St. Lawrence. Off Fame point it usually occupies a width of about 12 miles next the shore; but under some conditions it is displaced and occupies a belt in mid-channel, between the Gaspé and Anticosti coasts. Its strength as far down as the offing of Fame point usually varies between 1 and 2 knots, but a speed of as much as $2\frac{8}{10}$ knots was there observed. (See reports of tidal survey.)

SESSIONAL PAPER No. 21

The coast is so bold, from Gaspé as far as Matane, that a vessel may be in 50 fathoms when within three miles of the shore. Below Matane the 30-fathom line is nowhere more than 2 miles from the shore. (See charts 307 and 309.)

Warning.—From the above it is clearly necessary to make full allowance for a strong downward current, and, especially in thick weather, to give the south shore a good berth, which may safely be done as the estuary is clear and open for a width of 25 miles, as far up as Bic island. Hugging the south shore is only incurring a quite unnecessary risk for the sake of saving time. Constant use of the lead in thick weather is also urged.

Variation in 1902: 2° W.

Source of information: Report of Chief Engineer, M. & F.

Admiralty charts affected: Nos. 307, 309, 312 and 2516

Publication affected: St. Lawrence Pilot, vol. 1, 1894; pages 17-21.

Department of Marine and Fisheries of Canada file No. 13923.

F. GOURDEAU,
Deputy Minister.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, CANADA, May 6, 1902.

Pilots, masters or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notice of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada. Such communications can be mailed free of Canadian postage.

SS. 'IBERIAN.'

In the investigation into the cause of the mishap to this vessel, the following facts were ascertained:—

On her voyage to Quebec, the *Iberian* went ashore on Red Island Reef, at 5.50 o'clock, p.m., on October 30, 1902, while under the charge of Pilot Joseph E. Lachance. She was very seriously damaged, in fact so much so, that she has to remain in the dry dock at Lévis, for the winter. The master was down below at the time of the accident; the vessel was going $11\frac{1}{2}$ knots, and the third officer was on the bridge. The night was quite clear and the weather fine.

I consider this casualty attributable to the pilot mistaking Red Island lightship for White Island lightship, and also to his leaving the bridge and going below, where he was at the time of the disaster. His certificate has been suspended for eighteen (18) months. I have also to point out that the master was down below when the vessel struck.

I consider a formal inquiry necessary in this case.

BARKENTINE 'EDWARD SEYMOUR.'

In the investigation into the causes which led to the total loss of the barkentine *Edward Seymour* on the Island of Anticosti, with the loss of one seaman, the following facts were ascertained:—

This vessel left Cadiz, Spain, on September 6, 1902, loaded with salt and bound for Malbaie, Gaspé county, Quebec. The first land sighted on this side was Cape North,

2-3 EDWARD VII., A. 1903

Cape Breton. From this time on, until the vessel went ashore, they appear to have had more or less terrific weather, blowing a heavy gale and thick. It was absolutely impossible for the master to get any sights for some three days before she was wrecked, and he was depending entirely upon his dead reckoning. From all the information that could be obtained, the *Edward Seymour* appears to have been well found in every way as regards spars, sails, boats, &c.; she had three compasses, and the master said they were correct. The ship's logs and all documents were lost at the time she went ashore.

This casualty was not caused by any inefficiencies or deficiencies in the 'Aids to Navigation' in the route of the Gulf and River St. Lawrence.

This casualty, I consider, is not attributable to anything that can be called negligence on the part of the master or crew, but comes within the category of 'fortuitous accidents.'

I am of the opinion that a formal enquiry is not necessary in this case.

I have the honour, to be, sir,

Your obedient servant,

O. G. V. SPAIN,

Commissioner.

It will be seen from the foregoing reports of investigations that Commander Spain and Assessors Clift and Simons, do not attribute any of the casualties to inefficient aids to navigation, or a deficiency of such aids. While the casualties were due to other causes than deficiency in aids to navigation it is not claimed that improvements are not necessary, on the contrary the work of adding lighthouses, fog-alarms, gas buoys, warning buoys, beacons and other aids is steadily progressing. Tests are being made of different lighthouse apparatus, illuminants, sirens and other fog-alarms with a view of securing the most modern and powerful kinds. Experiments have been made with acetylene gas as an illuminant and information on the subject will be found in another part of this report. Tests have also been made of the Scotch siren operated by compressed air and an invention called the diaphone. These tests have been made for the purpose of selecting the most suitable aids for Canadian waters generally as well as the St. Lawrence route.

F. GOURDEAU, Lt.-Col.,

Deputy Minister of Marine and Fisheries.

OTTAWA, December 22, 1902.

SESSIONAL PAPER No. 21

ANNUAL REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT
OF MARINE AND FISHERIES.

The Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit a report of the work done in the several services under the supervision of this office during the twelve months ended November 30, 1902.

This embraces most of the technical work at departmental headquarters, including the construction and maintenance of lighthouses, lightships, fog-alarms, buoys and beacons ; the supervision of construction and repairs of lifeboats ; the administration of the vote for the removal of wrecks and obstructions in navigable waters ; tidal and current surveys ; hydrographic surveys, and the publication, examination and correction of hydrographic charts ; construction of and repairs to fish hatcheries and refrigerators ; engineering points in connection with the construction and maintenance of fish-passes ; supervision of surveys of oyster beds ; examination of applications for foreshore, wharf and water lots as they affect the interests of navigation ; preparation and publication of notices to mariners and hydrographic notes, &c.

There are special staffs appointed for the tidal observation work and for the hydrographic survey work ; the remainder of the work of the branch is attended to by the general staff of the office.

STAFF.

I have again much pleasure in testifying to the good work done by my staff throughout the past year.

The vigour with which the government is improving and increasing aids to navigation has very materially increased the work of designing in the department, and these increased demands on the staff have not only worked all the members hard, but have necessitated the employment of two additional architects.

Mr. F. J. Alexander, a practising architect in Ottawa, has been temporarily employed as architect and draughtsman since March 29, 1902, with a salary at the rate of \$1,200 per annum.

Mr. E. C. Larose, a practising architect in Ottawa, has been temporarily employed as architect and draughtsman since April 24, 1902, with a salary of \$1,200 per annum.

OFFICE WORK.

A large proportion of the work done by the general staff of the branch consists in the construction and maintenance of light buildings, fog-alarms, buoys, beacons and other aids to navigation. Full details of the work done in this connection last year are contained in a separate report prepared by me, in my capacity of general superintendent of lighthouses, which is attached hereto. (Inclosure A.)

2-3 EDWARD VII., A. 1903

Plans and specifications for all important new buildings and repairs, new vessels, buoys, &c., are made or approved in this office.

The following table indicates the work done in the draughting office during the twelve months ending November 30, 1902 :—

Description of Work.	Plans Designed.	Plans Received.	Copies Made.
Lighthouse towers and dwellings...	32	8	109
Fog-alarm buildings...	1	1	11
Details	29	11	57
Wharfs, piers, &c.	3	4	18
Outbuildings.....	5	1	31
Buoys and apparatus	2	8	50
Machinery.....	5	42	38
Lanterns and illuminating apparatus	1	41	10
Steamers.	1	.....	1
Land surveys.	3	36	56
Charts.....	.....	1	2
Charts under construction.....	1	.....	.....
Miscellaneous	20	87	204
Plans relating to foreshore.....	.....	57	7
	103	297	594

Total plans for twelve months, from December 1, 1901, to November 30, 1902.....	994
Charts received and recorded.	177
" " entered in chart book.....	58
Photographs received and recorded.....	289
Specifications written..	46
Notices to mariners issued (comprising 406 subjects).....	124

The work of the branch is increasing so steadily and so rapidly that it is evident the day is not far distant when the chief engineer will be compelled to restrict his work to a general supervision of the technical work of the department. To meet this contingency an effort is being made to allot to different members of the staff particular specialties.

Mr. B. H. Fraser has been entrusted during the past year in addition to his ordinary duties as assistant in charge, with the designing and installation of machinery, and has spent a great deal of time on the perfecting of fog alarm machinery.

An officer should be selected to superintend the hydrographic work.

The detail required in issuing notices to mariners has continued very heavy, and demands so much time that it became necessary to allot an assistant for the special work of preparing them for publication. This work has been placed in the hands of Mr. J. M. O'Hanly.

During the past year, 124 notices, comprising 406 subjects, have been published, and the form of the notices has been changed, rendering them both more compact and more explicit. They are also numbered separately as Atlantic, Inland and Pacific notices to facilitate filing.

We are not attempting to issue notices for the whole world, as is done by some governments, but try to promptly issue all notices relating to Canadian waters, and occasionally include items relating to foreign ports that might be of interest to ships

SESSIONAL PAPER No. 21

leaving Canadian ports. During the past twelve months, foreign notices were issued, covering twelve items relating to Newfoundland, two items relating to the Atlantic, seventy-four to the inland, and six to the Pacific waters of the United States, as well as sixteen notices referring to transatlantic, and eight to transpacific subjects.

To facilitate prompt distribution, and to insure the notices reaching all mariners interested, the distribution list has been revised and the addresses printed. The department desires to insure every mariner using Canadian ports seeing all notices to mariners issued by the Canadian Government.

Arrangements have been completed for issuing an index to the year's notices to mariners, so that the offices which file them can bind the whole, for future reference, into neat book form.

The usual annual edition of the List of Lights and Fog Signals on our coasts corrected to April 1, 1902, was issued on June 3, 1902. It is hoped that the next edition, corrected up to January 1, 1903, may be ready soon after New Year.

ACETYLENE LIGHTING.

During the past year experiments have been in progress with a view to ascertaining the practicability of adopting acetylene as a lighthouse illuminant. Five generators manufactured by the Savoie-Guay Company, under the patent of Doctor Chevrier, have been purchased and installed at the lighthouses at Oka, L'Orignal, Aylmer island and Baskin wharf range lights, on the Ottawa river. This machine is designed to withstand frost, a glycerine mixture being used as a gas seal instead of water. One of these machines has already given out, and it seems evident that the cost of installation and maintenance will both militate against their adoption for small lights.

A Sunlight acetylene plant was installed by the Sunlight Gas Company at Father Point light station, and acetylene gas lights from one foot burners are now used in the nine reflectors of the revolving apparatus. The result has been a very great increase in the power of the light, and reports have been received that the light, which has a horizon of only 14 miles, has repeatedly been seen as far as 28 miles. Mariners have spoken in the highest terms of the great increase in the power of this light. The cost of the installation here was greater than it should have been. The consumption of carbide appears to be larger than necessary, and it is a question whether the machinery and gas fixtures will prove permanent in character. These are details of construction that can undoubtedly be overcome, but the existence of these doubtful points indicates that a perfect acetylene generating machine for lighthouse work has not yet been secured.

Mr. J. F. Fraser, acting on instructions from the Minister, installed on the buoy tender *Scout* a temporary acetylene gas generating plant. From the middle of spring until the close of navigation four of the six gas buoys in Lake St. Louis were charged with a mixture of 75 per cent of oil gas and 25 per cent of acetylene, while two burned pure acetylene. A very marked increase in the power of the lights was noted and commented upon by mariners. Experiments in buoy lighting will be continued during the winter.

I am not quite satisfied that the problem of adapting acetylene gas to lighthouses has yet been solved. It appears to me that the installation of independent plants at

2-3 EDWARD VII., A. 1903

each station is expensive and wasteful, and I think, probably that a solution of the problem will be found rather in the direction of supplying compressed acetylene to the several lighthouses than in producing the gas at the stations themselves.

FOG ALARM MACHINERY.

The type of fog-horn with which the Canadian stations are at present largely equipped is practically out of date, but the more modern alarms are, as a rule, very complicated, and we have been looking for a type which will be simpler than anything now in use and which will cost less for installation and maintenance, relatively to its sound-producing capacity.

The department has lately carried out a series of tests which tend to show that a new invention, called the diaphone, will meet the above conditions. At first little more than a toy, it has been developed by the manufacturer, under the direction of the department, to a point where it will compete successfully with any alarm now in existence. It is hoped that this instrument will be in practical operation in a very short time at the new station at Father point, where it will be tested against the Scotch type of siren, which gave the most satisfactory results at the exhaustive experiments recently carried out by the English Trinity House.

The aim of the department has been to go carefully forward, avoiding the danger of making a large number of costly installations which might have to be superseded before long.

The most important installation of the four made during the past year was that at Louisbourg, where a first order Scotch siren was put in operation in February, 1902. The siren and appurtenances were purchased in Scotland, but the engines, tanks, compressors and other auxiliaries necessary for the supply and storage of the compressed air used in the operation of the machine, were made in Canada. The total cost of the installation was \$12,036.13.

At Fame Point an alarm of the Hamilton-Foster type was put in operation in October, 1902. In this system the alarm is supplied with a number of horns pointing in certain definite directions, by which means the inventors claim that mariners can always determine their bearing from the alarm. This alarm has not been in operation a sufficiently long time to properly demonstrate its capabilities. The total cost was \$10,324.57.

At Cape Croker, on Georgian Bay, an electric alarm was established in July, 1902. This is the invention of a Canadian, and a similar alarm has been in use for some time in Victoria Harbour, B.C., where the city current is used. At Cape Croker the plant has failed to give satisfaction, the sound produced being comparatively feeble. It is expected that this will be improved by changing some of the electric machinery, but it is probable that the usefulness of this type will be largely confined to the purpose of marking pier heads and slips at points where an electric current can be easily and cheaply obtained. The cost of the machinery here was \$3,358.78.

The fourth installation was at the middle ground in Pelee passage where a siren operated by steam was installed on October 1, 1902.

SESSIONAL PAPER No. 21

Several fog-alarm buildings are in course of construction ; all being designed with a view to their adaptation to new forms of apparatus should it appear desirable to make a change. Our experience as well as that of other countries tends to show that compressed air is a more successful medium than steam for operating alarms of the siren type. For this reason, and also because it is difficult to obtain fresh water at many of our fog alarm stations, oil engines are being installed in our modern fog alarms, in the place of steam boilers.

PERSONAL INSPECTIONS.

During the past year a great deal of my time was again occupied in inspection work.

The construction of a second lighthouse on a pier in the Traverse of St. Roch necessitated six trips to Quebec and the Traverse to inspect the progress of the work, to survey the site and to superintend the sinking of the pier.

The taking over of aids to navigation from the Department of Railways and Canals involved three inspections on the River St. Lawrence, between Montreal and Kingston, receiving the equipment and organizing the service.

Several visits were paid to the St. Lawrence ship channel, in connection with the extensive improvements being made in it this year.

In June, 1902, I accompanied the Honourable Mr. Sutherland on an inspection of aids to navigation between Montreal and Chicoutimi, and in November accompanied the Honourable Mr. Préfontaine on a similar inspection between Montreal and Quebec.

In June, a special inspection was made of Lake Superior and the sites of several new aids to navigation were located.

In July an inspection of parts of the maritime provinces was made. On the steamer *Brant* I visited harbours on the east coast of New Brunswick, and found the buoyage, which is under contract in the several harbours, far from efficient.

In August and September, British Columbia was visited.

Most of our existing aids to navigation on the Pacific coast were inspected : sites were chosen for new aids to navigation ; three hydrographic surveys were made with the assistance of Capt. Walbran, and other hydrographic work done. Details of this work will be found in other parts of this report.

In consequence of the great increase in building operations, during the past season, it was impossible for me to do all the outside inspection work required, and inspections were consequently made at several times by the following members of my office staff : Messrs. B. H. Fraser, U. P. Boucher, J. F. Fraser, E. C. Larose, H. E. Fosbery, W. H. Noble and A. Theriault.

REMOVAL OF OBSTRUCTIONS.

Very little work has been done during the past twelve months under this vote, and I think the amendment in the Act which prevents owners from shifting their responsibility after a wreck has occurred may be thanked for the small number of derelicts now allowed to disfigure our shores.

2-3 EDWARD VII., A. 1903

During the fiscal year ending June 30, 1902, the total expenditure on this service was \$1,325.25.

The following statement shows work done in this connection during the past twelve months so far as it has come under the official notice of this department:—

Locality.	Obstruction.	Work done, &c.	Cost to Governm't.
			\$ cts.
St. Andrews, N.B.	Old wreck in channel	Removed by John Pendlebury..	9 00
Whitehead, N.S.	Sch. <i>Geo. P. Trigg</i> , sunk	Buoyed	6 50
Prescott, Ont.	Str. <i>Rothsay</i> , sunk	Blown up by R.M.C. officers	368 96
Port Burwell, Ont.	Sloop <i>Lulu Beatrice</i> , beached	Blown up by D.G.S. <i>Petrel</i>	None.
Lake Erie, Ont.	Str. <i>W. H. Stevens</i> , burned and sunk	Examined and buoyed	None.
"	Str. <i>City of Venice</i> , sunk	Spar removed by D.G.S. <i>Petrel</i>	25 75
"	Sch. <i>H. A. Barr</i> , sunk	Mast and floating wreck removed by D.G.S. <i>Petrel</i>	None.
Port Stanley, Ont.	Log in harbour	Removed by A. C. Brown	9 00
Middle Island, Ont.	Str. <i>George Dunbar</i> , sunk	Marked by buoy	None.
Mouth of Detroit River, Ont.	Sch. <i>Mont Blanc</i> , sunk	Buoyed by D.G.S. <i>Petrel</i>	None.
Sandwich, Ont.	Dredge beached	Removed by H. W. Baker	None.

BUOYAGE.

The buoy service in the Dominion has been greatly improved within the last year by increasing the number of buoys and by replacing old buoys by larger ones of better construction.

In the River St. Lawrence between Montreal and Prescott very important changes were made, as detailed in my report as general superintendent of lighthouses. The buoys previously under the divided control of this department and that of Railways and Canals, as well as the steam barge buoy tender *Scout*, were all transferred to this department, and an assistant engineer put in charge of the system.

The steamer has been constantly employed in this district, improving the buoys and placing new ones to mark dangers and channels not previously buoyed. Since she was taken over by this department, the *Scout* has had a chart room and additional cabin accommodation added to her, and has been equipped for tending gas buoys by installing on board a gas compressor, and supplying three gas holders of 260 cubic feet capacity each.

It is the intention to extend the operations of the *Scout* in connection with the buoy service at least as far west as Kingston. At present there are contracts in existence which will not terminate for a year or so, but the buoys in the districts for which contracts have been made will be included with the buoys attended to by the *Scout*, as the contracts terminate. It will be necessary to establish a buoy depot, store and workshop in connection with our extended work in this section, and Morrisburg has been chosen as the headquarters for this service.

There are now about 360 districts buoyed in the Dominion, including harbours, bays, rivers and lakes, with over 3,200 buoys.

SESSIONAL PAPER No. 21

The Montreal ship channel buoy service was started about April 3, 1902, but an accident to the machinery of the *Shamrock* delayed the work for a few days. The department secured the assistance of a tug from the Public Works Department and the work was proceeded with. On April 16, a large number of the buoys had been placed and the channel between Montreal and Quebec was practically open. Some changes were made in the buoys in Montreal harbour and the buoy service continued until all the buoys were placed. Between Quebec and Platon extensive changes were made in the buoys by substituting steel buoys for wooden ones, and by increasing the size of existing can buoys.

The *Shamrock* was repaired and again put in commission on May 23.

Some important steel buoys had been left in position in the fall of 1901 to accommodate ocean-going steamers, and were frozen in before it was possible to lift them. These buoys were sunk during the winter in order to save them from being carried away by ice in the spring. They were grappled for and recovered in the spring. The expenditure in connection with this extra service was considerable, and it is not considered in the interest of navigation to continue the practice of allowing expensive steel buoys to remain in position until frozen in, as it seriously interferes with the supply of important and valuable buoys at the opening of navigation.

All the large buoys on the more exposed portions of the coast of the maritime provinces and British Columbia, consisting of automatic whistling and bell buoys and a large number of conical and can buoys are maintained by this department by utilizing government steamers as buoy tenders.

In the province of Quebec about 170 wooden and iron buoys and 12 gas buoys are maintained by the government steamers. The new steamer *Druid* was specially built for a buoy tender and is a powerful steamer, with the latest equipment and apparatus for handling large buoys.

In Nova Scotia there are 23 automatic whistling buoys, 18 bell buoys and 128 steel conical and can buoys. These are considered coast buoys and are placed and maintained in position by Dominion steamers.

In New Brunswick there are 16 whistling and bell buoys, 15 steel can and conical buoys and a bell boat. In that province 18 new steel buoys were supplied last year at a heavy cost. Some of these buoys were sent to districts under contract to replace large wooden buoys. Some of the signal buoys in the Yarmouth district are maintained by the New Brunswick agency and are included in the New Brunswick buoys.

In Prince Edward Island there are 3 large signal buoys and during the past season 2 steel conical buoys were added to the number of coast buoys, making 5 in all.

In British Columbia about 70 buoys are tended by the Department's steamer *Quadra* and 20 in the Fraser river by the snag boat *Sampson*.

The number of bell buoys in Ontario is 4, but the gas buoys have been increased by the change made between Montreal and Prescott on the St. Lawrence river. There were formerly 5 gas buoys maintained in Ontario and 26 gas buoys have been added to the list making 31 in all. The bell buoy marking Lone Rock was sunk in the fall of 1901 and has not since been recovered or replaced.

2-3 EDWARD VII., A. 1903

During the season of 1902, the buoy service on the Nova Scotia coast was attended to by the steamers *Lansdowne*, *Stanley* and *Aberdeen*. Each steamer performed the service at intervals. A new steamer has been built for the Nova Scotia agency and will be employed in Nova Scotia, probably from the beginning of 1903. This steamer is specially equipped for raising and placing large automatic buoys.

In some districts the harbour masters attend to the buoyage, in others the buoys are under the control of local harbour boards, but in the majority of cases a very large number of buoys are maintained under the contract system, the contractors undertaking to maintain the buoys under a strict specification for a bulk sum per annum. The contracts usually cover a period of three years. There are now about 200 contracts in force, some of which will terminate next spring.

It is the purpose of the department, if possible, to employ some of the Dominion steamers in the buoy service more largely and this will diminish the number of contracts. If it is found impossible with the present number of steamers to maintain the buoy service, I should advocate improving the inspection and superintendence by appointing some or all of the captains of government ships, including fishery protection vessels, superintendents of the buoy service in addition to their other duties.

The office work in connection with the maintenance of the buoys, preparation of contracts, examination of accounts, inviting tenders for contracts and the work in connection with the construction of new buoys, is attended to by Mr. W. W. Stumbles. This involves an immense amount of detail.

Appended inclosure B is a list of the buoys in the Dominion under departmental control.

GEOGRAPHIC NAMES.

The third annual report of the Geographic Board of Canada, with a list of all decisions reached up to the date of its issue, was published in July, 1902, as a supplement to the annual report of this department; and the fourth annual report, containing only decisions reached after the issue of the third, was similarly issued in November, 1902.

A few decisions, affecting names on the Admiralty charts, were announced in notices to Mariners. These were not important in themselves, but the existence of the board as an authority for fixing authoritative orthography and nomenclature is greatly appreciated.

HYDROGRAPHIC WORK.

The hydrographic survey of the Canadian shores of the great lakes has made good progress during the past season. Mr. Stewart, on the steamer *Bayfield*, began the survey of Lake Superior, taking up the work at Coppermine point, the northern limit of the survey of Whitefish bay, by the United States Corps of Engineers, and completed a thorough examination of the water off the shore as far north as Cape Gargantua. One very dangerous and hitherto unknown shoal was found lying $1\frac{3}{4}$ miles west of Leach island, with only fourteen feet water over it. The shoal off Corbay point was examined and described; also a large uncharted bank lying south of Montreal island, and Mica shoal.

Observations for the variation of the magnetic needle were made in October, at Gargantua harbour and Batchawana bay.

SESSIONAL PAPER No. 21

Mr. Stewart had no assistant during the season, and was seriously handicapped by being obliged to take all fixes alone.

The boiler of the steamer *Bayfield* was partially repaired in the spring: further repairs to the hull and machinery are necessary before she can be used for any service.

In December, 1902, the steam tug *Lord Stanley* was purchased from Mr. Geo. T. Davie, of Lévis, to replace the *Bayfield*, which is a very old boat to venture on the exposed waters of Lake Superior. On her way to the lakes the *Lord Stanley* met with an accident in Toronto, and the repairs involved prevented her use this season on Lake Superior. She was therefore lent to the Department of Public Works for ship channel work, and during the coming winter will be fitted at the Sorel yard for hydrographic surveying, and will be used by Mr. Stewart next year.

Mr. F. Anderson, assisted by Mr. R. E. Tyrwhitt, continued the survey of Lake Winnipeg, begun by Mr. Stewart in 1901. He made good progress in the examination of the east shore of the lake, developed good channels into Berens and Big Black rivers, located and examined George, Little George and Sandy islands. The tug *Frank Burton* was chartered for the purpose between May 20 and October 16.

Last winter two fair sheets of the survey of Lake Huron, between Southampton and Goderich, were prepared and sent to the hydrographer of the Admiralty for engraving.

In June last, the Admiralty issued a new coast chart, on a scale of 8 inches to the mile, covering the survey between Cove and Chantry islands, Lake Huron.

Advantage was taken of the appointment of Mr. J. F. Fraser, as engineer in charge of aids to navigation between Montreal and Kingston to have some hydrographic work attempted in his division, and during the summer a chart room and additional cabin accommodation were added to the steam barge *Scout* to make her more convenient for hydrographic work.

The absence of any suitable buoy plans necessitates the preparation of a set of plans of the whole river between Montreal and Kingston, in order that the buoys may be placed and checked by sextant angles.

On Lake St. Louis several detached hydrographic surveys had already been made by the Department of Railways and Canals, and that department has a vote for the complete survey of the lake. In the meantime the triangulation of that lake has been completed by Mr. Fraser. This will enable the detached surveys, above alluded to, already made, to be connected and utilized in providing the required buoy plans of this lake. As opportunity offers, it is proposed to extend the triangulation westward, and, between Cornwall and Ogdensburg, to tie in with the United States triangulation of 1870-3.

Special attention has been paid during the past year to the publication, in Notices to Mariners, of all information that reached my office respecting hydrography, and very full sailing directions have been included in the description of aids to navigation. The following hydrographic notes, not elsewhere referred to in this report, were issued:—

AFFECTING THE ATLANTIC COAST AND ST. LAWRENCE.

St. John —Warning that Negro point breakwater has been extended beyond the lighthouse; change of time for dropping time ball, and announcement of adoption of 60th meridian time throughout the maritime provinces.

2-3 EDWARD VII., A. 1903

Brazil rock.—Position of bell buoy on charts corrected.

Halifax.—Position of inner automatic buoy corrected; vessels asked to report at Camperdown signal station; boats warned of danger zone at McNab island rifle range.

Jeddore.—Position of range lights fixed, and sailing directions.

Canso.—Cape Breaker bell buoy not shown on some charts.

Gut of Canso.—Railway termini described.

Bad Neighbour shoal.—Depth corrected.

Grand Narrows.—Warning respecting railway bridge.

Cape George.—Position of lighthouse corrected.

St. Paul island.—Position of signal station described; two notices.

Strait of Belle-isle.—Establishment of telegraph station at Amour point light-station, and installation of Marconi wireless telegraph stations at Belle isle lighthouse and Chateau.

Mingan.—Position of rock in channel fixed by Commander W. Wakeham.

Richibucto.—Description of approach to harbour, and sailing directions, from survey by the undersigned.

Shippigan.—Description of entrance from gulf, buoyage and warning to mariners.

Caraquet.—Hydrographic notes from survey by the undersigned.

Bathurst.—Depths, from inspection by the undersigned.

Traverse of St. Roch.—Sailing directions by the undersigned.

Maranda rocks.—Extension, found by Capt. Koenig.

St. Antoine.—Sailing directions for new range lights, by the undersigned.

Lake St. Peter.—Description of hydraulic dredge *J. Israel Tarte*, and her work, with warning, by F. W. Cowie, Esq., C.E., P.W.D.

Contrecoeur to Cap St. Michel.—Description of improved ship channel, from inspection by the undersigned.

INLAND NAVIGATION FROM MONTREAL TO FORT WILLIAM

S ulanges canal, upper entrance.—Description of lights and buoys, with sailing directions, from a survey by the undersigned.

North channel, Galops.—Described from inspection by the undersigned.

Montreal to Prescott.—A full list of buoys, including those taken over on the opening of navigation, from the Department of Railways and Canals, was published from a report prepared by Mr. J. F. Fraser, engineer in charge.

Thousand islands.—A resurvey of the Canadian channel has been made by Mr. S. J. Chapleau, C.E., for the Department of Public Works. During the course of his work he located several uncharted shoals and rocks. Eleven of these dangers have been located and described.

SESSIONAL PAPER No. 21

Wolfe island.—Shoal at foot being dredged and buoyed under supervision of Mr. Chapleau.

Port Colborne.—Changes in the harbour, in connection with the improvements in progress, described from inspection by the undersigned.

Long point.—Lifeboat station removed from Port Rowan to the coast of Lake Erie, two and a half miles west of the gap lighthouse.

Limekiln crossing.—Depth of water in dredged cut.

Sarnia.—Description of the shoal opposite the town.

Goderich.—Hydrographic notes and amended sailing directions, based on an inspection by Mr. W. J. Stewart.

Collingwood.—Description of improvements, buoyage, and other hydrographic notes, from a report by the harbour master.

Depot harbour.—Establishment of a storm signal station, from a report by the director of the Meteorological Service, and description of breakwater and wharf extension, from report by Mr. J. W. Fraser, P.W.D., engineer in charge.

Coppermine point.—Description of fishing station, from inspection by the undersigned.

Gargantua.—Hydrographic notes, from survey in 1895 by U.S. Lake Survey, and from personal inspection by the undersigned.

Thunder bay.—Shoal reported by U.S. Hydrographic office; existence later disproved.

PACIFIC COAST.

The following hydrographic notes result from surveys and inspections made by Captain J. T. Walbran, Master D.G.S. *Quadra*, who takes great interest in cartography and has contributed much information respecting British Columbia waters:—Nootka sound—Uncharted rock in Guaquina arm. Clayoquot sound—Uncharted rock in west end of Browning passage; uncharted rocks at the eastern end of Hecate passage; position of wharf on Stubbs island. Barkley sound—Uncharted rock off Table island, and hydrographic notes. Port San Juan—Wharf in Snuggery cove, &c. Nitinat—Position of Clo-oose village, and notes. Chemainus—Uncharted rock. Tricomali channel—Location and description of Victoria rock. Portier pass—Notes on rocks. Burnaby shoal—Clearing marks described. Bute inlet—Uncharted rock—Malaspina strait—Position of Sliammon village. Scott islands—Hydrographic notes. Lama passage.—Rock non-existent. Bella-Bella.—New Indian village located. Seaforth channel.—Joassa passage described, &c., Wellington rock located and marked. Metlahcatlah harbour.—Hydrographic notes. Carter Bay.—Shore line corrected.

During my visit to British Columbia this year I had the opportunity of doing some hydrographic work. The following details were embodied in notices to mariners: Barkley sound.—The terminus of the trans-pacific cable described; buildings and wharf located on charts. Clayoquot sound.—Notes respecting Lennard island and Templar channel: position of rock east of Clayoquot village; rocks located west of Browning passage; uncharted shoal in Browning passage located and fixed.

2-3 EDWARD VII., A. 1903

The following details respecting the Pacific coast are from various sources :

Carmanah.—Position of lighthouse fixed.

Esquimalt.—Description of Bedford signal tower on Grant Knoll, by Capt. E. Fleet, R.N., H.M.S. *Phaeton*.

Brotchy ledge.—Description of beacon corrected by agent.

Sidney channel.—Rocks located by Commander C. H. Simpson, R.N.

New Westminster.—Bridge under construction across Fraser river reported by agent.

English bay.—Telegraph cable located by agent.

Point Atkinson.—Periodicity of fog signal corrected.

Vancouver harbour.—Sailing marks described by Capt. C. Keppel, R.N. Intervals between strokes of Brockton point fog bell corrected.

Queen Charlotte sound.—As results of the resurvey of this locality now being prosecuted by Commander C. H. Simpson, R.N., rocks have been found and fixed off Foster island; two in New channel; and three in Sealed passage and North channel.

Dryad point.—Description of light station amended.

SURVEY OF TIDES AND CURRENTS.

The report of Dr. W. B. Dawson, on the progress of this survey, shows a continuous advance in the tidal information obtained and published, both for the eastern coast of Canada and for the Pacific. It is attached to this report as Inclosure C, and is also issued in pamphlet form as a supplement to the annual report.

An important step may be noted, as an aid to navigation on the St. Lawrence route. The tidal observations throughout the St. Lawrence in 1900 make it evident that both tide and current in the open estuary below the Traverse could be better referred to Father point than to Quebec. The tidal record from Father Point is therefore being submitted to an analysis which will enable tide tables to be calculated directly for that locality. Until now, these tide tables have been deduced from the Quebec tables by an elaborate method which was devised to save the expense of analysis at an additional station, but it has become apparent that a direct calculation will give more accurate results, and will enable the turn of the strong tidal currents of the St. Lawrence to be more correctly known; as their relation to the time of the tide itself is already ascertained.

In this report, all the information yet obtained is summarized, regarding the tide and current in Northumberland strait; and the laws which govern the movement of the current are given. From observations taken at Pictou island, the time at which the current turns, is found to vary with relation to the moon's declination; which has proved to be the ruling element in this region. This is very confusing to the mariner, as the turn of the current is thus out of accord with the moon's phases, and has no fixed relation to the spring and neap tides.

The ordinary navigator takes refuge in the conclusion that the currents are chiefly influenced by the wind. But their movement is in reality reduceable to astronomical laws, although these are complicated in their character.

SESSIONAL PAPER No. 21

Further observations of the current in this strait were obtained at Cape Traverse, from the movement of the ice, and from fishing boats which anchor in mid-strait. The relation between the turn of the current and the time of the tide is found to be most consistent when the principal tidal station at St. Paul island is taken for reference, rather than Pictou in the strait itself.

On the Pacific coast, good progress has been made, both in the improvement of the tide tables through the analysis of further tidal records from the principal stations, and also in the establishment of additional tidal stations to extend the information available. A summary of the results obtained to date, is given in this report. In the tide tables which were first published for the year 1901, information is now given for Victoria and Esquimalt; Vancouver, New Westminster, Nanaimo and Baynes sound; as well as for the current in the First narrows, Burrard inlet. The stations for which the tide tables are primarily calculated, are Victoria, and Sand Heads in the Strait of Georgia; and the results deduced from these are much better than can be obtained from comparisons with Port Townsend, as given in the tide tables of the United States Coast Survey. The reason for this is the difference in the character or type of the tide.

Further information is given regarding tide levels and datum planes in our harbours, which is of the first importance for harbour improvements, drainage works, &c. This is one of the collateral ways in which this survey is of service to other departments.

Five summer tidal stations were erected this season with the object of obtaining tidal data as a basis for the investigation of the currents at the entrance to the Bay of Fundy, and in the bays on the south coast of Newfoundland. Two more tide gauges were also placed on the open Pacific coast, at Barkley sound and at Port Simpson, arrangements for which were completed by the undersigned when in British Columbia.

The tide tables have again been issued in three sets as explained in the last report, and the demand for them increases steadily. Considerable work has also been done in improving their accuracy, by the analysis of further tidal record. This will be of benefit to the tide tables in all future years, and it will also be of advantage to the regions which depend on the principal harbours as ports of reference.

Two notices to mariners were issued relating to currents, one warning them against the strong downward current off the Gaspé coast, which is undoubtedly responsible for some casualties; the other giving results of observations by H.M.S. *Egeria* in the approach to Juan de Fuca strait.

The total expenditure on this survey during the fiscal year from June 30, 1901, to June 30, 1902, was \$8,951.08, in which a supplementary estimate of \$1,500 is included, which was expended upon material for heavy repairs required at the permanent tidal stations.

The whole respectfully submitted,

WM. P. ANDERSON,

Chief Engineer.

December 9, 1902.

[INCLOSURE A.]

DETAILED REPORT OF THE GENERAL SUPERINTENDENT OF LIGHT-
HOUSES ON CONSTRUCTION AND MAINTENANCE OF LIGHT-
HOUSES AND OTHER AIDS TO NAVIGATION UP
TO NOVEMBER 30, 1902.

To the Deputy Minister
of Marine and Fisheries.

SIR,—I have the honour to submit the usual annual report of work done in the construction and maintenance of aids to navigation for the year ended November 30, 1902.

Lighthouses, fog-alarms, buoys, beacons, and other aids to navigation throughout the Dominion of Canada are administered by the Department of Marine and Fisheries. The construction of new buildings and the more important repairs are under my direct supervision, the maintenance of existing stations is controlled by the several agents of the department, and the periodical inspection of the stations is made by inspectors resident in the different provinces, the agents in Prince Edward Island and British Columbia fulfilling the double duties. Much of the information contained herein is compiled from the annual reports of these officers.

The numbers and distribution of the several aids to navigation throughout the Dominion are shown in the following table :

District.	Light-stations.	Lights.	Keepers.	Fog-whistles and sirens.	Fog-horns.	Fog-bells.	Fog-guns or bombs	Whistling- buoys.	Bell-buoys.	Gas-buoys.
	*									
Province of Ontario.....	206	270	188	2	12	4			6	29
Light ships.....	3	3								
Province of Quebec.....	129	183	156	4	8	1	8	1		12
Light ships.....	7	7		3						(4 with bells).
Province of Nova Scotia.....	190	204	203	11	6	2	1	22	18	
Fog alarms.....	3									
Light ships.....	1	1								
Province of New Brunswick....	100	128	95	4	8	1	1	5	6	
Fog alarms.....	3									
Light ships.....	2	2				1				
Province of Prince Edward Island...	39	66	45		1			3	1	
" British Columbia.	30	35	32	1	6	6			1	
	713	899	719	25	41	15	10	31	32	41

* Lightships and fog alarms where there are no lights are in this column included in the total number of light stations in the Dominion.

Supplies for the lighthouse services are purchased in bulk, under contract, except in the case of articles of which only small quantities are required, in which case they are purchased locally in the open market. These supplies are distributed from the stores at each district headquarters, usually under the personal supervision of the inspectors of lights, who inspect the stations when delivering the supplies. They also arrange for all small ordinary repairs and periodical painting of the buildings. These routine duties are not alluded to in describing the repairs executed at the several stations.

SESSIONAL PAPER No. 21

Work of construction and extensive repairs are usually executed under contract; minor repairs are done under the lightkeeper's supervision, or by foremen employed in the several districts.

It has been usual to enumerate in this report most of the repairs undertaken at light stations, but details of small repairs are herein omitted. Ordinary small repairs, such as are required for the proper upkeep of the stations, have been made, usually under the supervision of the keepers, on authority from the several provincial agents.

Estimates for any unusual repairs, or items involving considerable expense, are submitted to the undersigned, and are authorized by the department from Ottawa before the work is undertaken. Full particulars respecting the cost of all repairs is contained in the Auditor General's report.

Lightkeepers and fog alarm engineers are expected to make any small repairs that can be reasonably expected of unskilled workmen, without charge, and are also called upon to do all painting required at the stations, being allowed some assistance when the buildings are so high as to require hanging scaffolds.

ONTARIO LIGHTHOUSE DIVISION.

This division includes the lighthouses and other aids to navigation in that part of the province of Quebec lying west of Montreal, all those in the province of Ontario, and those on lake Winnipeg, in the province of Manitoba. It is under the direct management of the headquarters staff at Ottawa.

The number of lighthouses, lighted beacons and lightships maintained by the Dominion in the Ontario division, as above described, is 273, located at 29 different stations.

The number of lightkeepers in this division paid directly by the government is 188; but in several cases assistants are employed by keepers and paid by them out of the allowance made by the government for that purpose.

There are in Ontario two fog whistles, twelve steam fog-horns and four fog-bells, operated by machinery, all located at light-stations, as well as six bell-buoys and twenty-nine gas-buoys.

Besides the lights maintained by this department as above described there are in Ontario the following aids to navigation: three lights on swing bridges; a system of lights on the Murray canal, maintained by the Department of Railways and Canals; five pairs of range lights on the Detroit and St. Clair rivers and one lightship with steam fog-alarm in Lake Erie, maintained by the American vessel owners principally interested; thirteen wharf lights maintained by the municipalities or corporations to which the wharfs belong; two range lights maintained by local interests at Pine Tree harbour, and one on Coppermine point.

Seven of these last described stations are aided by this department to the extent of being furnished with the necessary oil for their maintenance.

A steamer is chartered yearly for the supply of the lightstations on the River St. Lawrence and the great lakes, between Montreal and the head of Lake Superior, and the lighthouses are supplied and the stations inspected on this trip, which occupies about seven weeks, by Mr. Patrick Harty, Superintendent of Lights. Mr. Harty also inspected the lights on the Ottawa river, but a few small lights on isolated waters, including Lake Timiskaming, Lake Nipissing, Lake Simcoe and the Bay of Quinte, were not inspected. Mr. John Nash, local agent of this department at Rat Portage, inspects the lights in Lake of the Woods from time to time, and generally attends to the interests of this department throughout Rainy river district.

NEW AIDS TO NAVIGATION.

Soulanges canal, upper entrance.—The temporary range light structures previously used have been replaced by permanent iron lighthouses, circular in plan, surmounted by circular metal lanterns.

The buildings stand on gray limestone foundations, and are painted white with the lantern roofs red.

2-3 EDWARD VII., A. 1903

The front lighthouse stands on the south extremity of the west pier, and is 35 feet high from the ground level to the vane on the lantern. From it a fixed red light, elevated 31 feet above the water is shown, which should be visible 5 miles in, and over a small arc on each side of, the line of range.

The illuminant is compressed gas, but the light is watched.

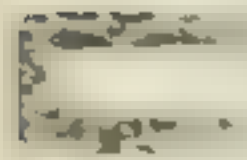
The back tower stands 1,585 feet S. 50° W. from the front one. It shows a similar light, elevated 46 feet above the level of the lake, which should be visible 5 miles in the line of range. The alignment indicates the west edge of the dredged approach to the canal and leads to the gas buoy at the southwest extremity of the dredging.

Lake St. Francis middle ground—A light established by the Department of Railways and Canals and put in operation on the opening of navigation in 1901, on a pier built on the middle ground between St. Francis and Thompson islands, Lake St. Francis, to mark a narrow part of the new 14-foot channel through the lake, was taken over by this department this year, with the other aids to navigation in this stretch.

The light is fixed red, shown from a lantern hoisted inside a tubular iron column capped by a pressed glass lens. It is elevated 24 feet above the level of the river, and should be visible 4 miles from all points of approach.

The column is painted black and is $20\frac{1}{2}$ feet high, from the pier on which it stands to the top of the lens. Surrounding the base of the column is an iron shed which, including its roof, is painted white.

The pier stands on the northwest edge of that portion of the middle ground which has not been removed by dredging. The lighthouse is distant 3,600 feet N. 70° E from Hamilton island light.

 *St. Regis dyke*—In connection with the establishment of a 14-foot channel in the stretch of the River St. Lawrence between the Soulanges and Cornwall canals, the Department of Railways and Canals opened a new channel south of Colquhoun island and the Crabs, instead of improving the old channel north of those islands. This necessitated the dredging of a channel 300 feet wide through the bar extending from the Crabs to the foot of Cornwall island, the material from which now forms a dyke on the south side of the cut.

The east end of this dyke was, on the opening of navigation in 1901, marked by a fixed red lens lantern light similar in every respect to that on St. Francis middle ground, last described, except that this pier is 1 foot higher above the water.

The light stands in the middle of a cribwork pier 30 feet square built to protect the east end of the dyke. It is distant $2\frac{1}{2}$ miles S. 72° W. from Stonehouse point light. From the light the dyke runs N. $71\frac{1}{4}^{\circ}$ W. It is 542 feet long.

This light did not prove satisfactory, as the lamp smoked the lens, and a spare gas buoy burning acetylene gas was therefore placed on the dyke near the light column, and substituted for it in September, 1902. On November 7 the buoy lantern was raised 10 feet, or $26\frac{1}{2}$ feet above the water, by increasing the height of the superstructure, and was moved 4 feet south to the position previously occupied by the light column first used.

A fixed white light shown from a gas buoy placed on the north corner of the crib at the west extremity of the dyke was at the same time established. This light is distant 500 feet N. 67° W. from the light on the east end of the dyke, above described. It is elevated $16\frac{1}{2}$ feet above the water, and should be visible 8 miles from all points of approach. It is an unwatched Pintsch gas light.

The two lights in one form a range to lead up the river to the turn abreast of Cornwall island point.

The establishment of this range rendered unnecessary the maintenance of black gas buoy No. 95 F, about 350 feet above the dyke, as the lights in one lead north of the point which it marks. It was therefore removed at the same time.

The range of lights leads well north of the shoal off Cornwall island point, marked by black spar buoy No. 97 F and black gas buoy No. 99 F. This shoal was marked, when the range lights were established, by discontinuing spar buoy No. 97 F, and by moving gas buoy No. 99 F one cable N. 73° E. to the turning point.

SESSIONAL PAPER No. 21

Galops canal head.—A light, established and operated by the Department of Railways and Canals was put in operation on June 28, 1902, on the western extremity of the pier on the south side of the upper entrance to the Galops canal.

The light is fixed red, shown from a lantern hoisted inside a tubular iron column, capped by a pressed glass lens. It is elevated 24 feet above the summer level of the river, and should be visible 4 miles from all points of approach.

The column is $20\frac{1}{2}$ feet high, from the pier on which it stands to the top of the lens. Surrounding the base of the column is an iron shed. The whole structure is painted white.

Galops north channel.—A light in every respect similar to that last described, except that it is elevated only 22 feet above the summer level of the river, was, on the 16th May, 1902, established and is maintained by the Department of Railways and Canals, on the angle of the dyke on the northwest side of the lower entrance to the north channel, a dredged approach to the upper entrance of the Galops canal.

Port Colborne.—The Department of Public Works is building a large breakwater to form an artificial harbour, and the contractors maintain a temporary light to mark its outer end. This light was originally a fixed white light; on July 20, 1902, it was changed in colour to red, and on November 15 a white light was added. The light, therefore, shows as a fixed red light, with a fixed white light four feet below it. Both lights are shown from lens lanterns hoisted on a braced mast erected 20 feet inside the extremity of the breakwater. The red light is about 23 feet above the lake.

The new breakwater terminates in a block 100 feet long, 60 feet wide and rising 13 feet above the lake level. The southeast, or outermost, corner of this block is 2,400 feet S 17° W. from Port Colborne main light. The range of lights on the west side of the old entrance, as at present located, leads 110 feet to the eastward, or clear, of this corner.

This Department, by arrangement with the Public Works Department, has had built in the outside block a concrete foundation for the permanent lighthouse which will eventually be established to mark it.

Pelée passage.—Work was continued on the lighthouse described in previous reports on the middle ground, and the lighthouse tower was erected and the light put in operation in it on July 4, 1902.

The tower is of steel plates, built in the form of the frustum of a cone, surmounted by a polygonal iron lantern, standing upon a cylindrical steel caisson filled with concrete and masonry, surrounded by a polygonal timber cribwork, rising 5 feet above the water level of the lake. The height of the lighthouse from the deck of the foundation pier to the vane on the lantern is 66 feet. The pier is brown, the tower white and the lantern red.

The light is a white light, showing two bright flashes of .58 second duration each, separated by an eclipse of .85 second duration, and followed by an eclipse of 5.48 seconds duration, the total period being 7.49 seconds.

The light is elevated 75 feet above the level of the lake, and should be visible 14 miles from all points of approach by water. The illuminating apparatus is dioptric of the third order, and was purchased from Messrs Chance Bros. & Co., of Birmingham. It cost \$3,216.47. The illuminant is oil vapourized and burnt under an incandescent mantle.

A steam fog siren, built into the base of the building, was put in operation on October 1, 1902. It projects from the north side of the tower at an elevation of 28 feet above the lake, and gives blasts of 7 seconds duration, with intervals of 30 seconds between them.

In consequence of the exceptionally stormy season it was found impossible to complete the cribwork protection around the concrete pier.

Cape Croker.—A light and fog alarm were put in operation on the outer extreme of the point one and a half miles southeastwardly from Cape Croker, on July 5, 1902.

The combined lighthouse and fog alarm building is a wooden structure, surmounted by a square wooden lantern, and stands 65 feet back from the water's edge. It is 25

2-3 EDWARD VII., A. 1903

feet high from its base to the top of the ventilator on the lantern, and is painted white. The keeper's dwelling, which stands 43 feet behind this building, is a rectangular wooden building, painted white.

The light is an occulting white light, visible for twenty-five seconds and eclipsed for five seconds, alternately. It is elevated thirty-one feet above the water level of Georgian bay, and should be visible ten miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order, and the illuminant a fifty-candle power incandescent lamp. In the event of the electric power at any time failing temporarily, a fixed white oil light will be shown until the occulting light can again be put in operation.

In thick weather a fog horn, operated by electricity, will be sounded for five seconds, with silent intervals of twenty-five seconds, alternately, the horn sounding while the light is occulted, and the horn being silent while the light is bright.

This is the first installation in Canada of an electric light and fog alarm operated by power developed in the lighthouse. The buildings were erected by Mr. Alexander Green of Owen Sound, whose contract price was \$3,559; the gasoline engines and electric plant, which are in duplicate, were furnished by Mr. A. Trudeau of Ottawa, at a cost of \$3,358.78.

In August the electric machinery failed to work satisfactorily, and since then only a fixed white light has been shown.

Meaford.—Cribs have been sunk for a 300-foot extension northward of the east pier, now in course of construction by the Public Works Department and a white lantern light maintained by the corporation is shown at night on a pole about twelve feet high near the north end of the cribs.

Richards landing.—Since October 30, 1901, a fixed white light, shown from a square tubular lantern with reflector, standing upon a shelf placed on the southeasterly corner of the warehouse on the wharf, has been maintained by the government wharfinger.

It is elevated sixteen feet above the level of the water, and should be visible three miles from all points of approach.

The shelf on which the lantern stands is ten feet high, and is painted white.

Stribling point.—For many years temporary range lights were maintained by the Lake Carriers' Association at this point, on the northwest end of St. Joseph island. These were taken over by this Department in 1900, and this year towers were erected to replace the masts from which lights were shown. The permanent lights from these towers were first shown on August 7, 1902.

The front tower stands 190 feet inside the shore line, on low land, and is a wooden building, square in plan, with sloping sides, surmounted by a square wooden lantern, the whole painted white. The height of the tower from its base to the top of the ventilator on the lantern is 33 feet.

The light is elevated 30 feet above the water, and should be visible 3 miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order.

The back range tower stands on the hillside, 1,447 feet S. $65^{\circ} 48'$ E. from the front tower. It is a square, wooden building, surmounted by an octagonal wooden lantern, the whole painted white. The height of the building from its base to the top of the ventilator on the lantern is 23 feet.

The light is elevated 53 feet above the water, and should be visible 4 miles in the line of range. The illuminating apparatus is catoptric.

The two lights in one lead through the middle of the dredged channel of the Middle Neebish from its intersection with the alignment of the lower Hay lake range lights to its intersection with the alignment of the Harwood point range lights.

A strip 50 feet wide on each side of the alignment has been cleared of trees up to the top of the hill behind the back tower. This cut in the woods shows very distinctly, and makes an excellent day mark when vessels are in the alignment.

The buildings were erected by Mr. H. W. Ross of Sault Ste. Marie, Ont., whose contract price was \$995.

SESSIONAL PAPER No. 21

Coppermine point.—A temporary light was established on the opening of navigation in 1901, by the Algoma Central steamship line, on the extremity of this point.

The light is fixed white, shown from a lens lantern, elevated forty-six feet above the water of the lake, and should be visible twelve miles from all points of approach; the illuminating apparatus is dioptric of the seventh order.

The lantern stands on the top of an open framed, square, pyramidal, wooden tower, standing upon the bluff at the northwest extremity of Coppermine point. The tower is twelve feet high to the table on which the lantern stands, and is whitewashed.

Michipicoten harbour —A lighthouse, built on the southeast extremity of Little Gros Cap, entrance to Michipicoten harbour, was put in operation in August, 1902, replacing a temporary lens lantern light maintained since the opening of navigation.

The lighthouse is a square wooden building, surmounted by a square wooden lantern rising from the middle of the cottage roof. The building and lantern are painted white. The roof of the building is red. The lighthouse is 31 feet high from its base to the top of the ventilator on the lantern, and is located on the summit of Little Gros Cap, on land 46 feet above the level of the lake, and 120 feet back from the water's edge.

The light is a fixed white light, elevated 70 feet above the water level of the lake; it should be visible 14 miles from all points of approach by water, but is not visible from the wharves in the harbour. The illuminating apparatus is dioptric of the seventh order.

The lighthouse was built by Mr. J. Candlish Kennedy, of Owen Sound, whose contract price was \$2,570. Tenders for this work were invited in 1901, but the lowest tender received, \$4,857, was so much above my estimate, that the work was postponed and new tenders invited.

CHANGES AND PRINCIPAL IMPROVEMENTS IN EXISTING AIDS.

Ste. Placide.—A lighthouse, from which the back light of the downstream range is exhibited, has been erected to replace the mast from which the light has heretofore been exhibited. The mast and day beacon have been removed.

The tower stands on the top of the bank, east of the parish church, 340 feet N. 11° W. from the front light. It is a wooden building, square in plan, with sloping sides, and is painted white. The height of the tower from its base to the top of the ventilator is 23 feet.

The light is elevated 48 feet above the summer level of the lake, and should be visible 3 miles in the line of range. The illuminating apparatus is catoptric.

The building was erected by day's labour, under the supervision of Mr. H. E. Fosbery, of my staff, and cost \$258.79.

Frenchman bay.—The lighthouse on the south end of the east pier head, formerly stood on a cribwork block raised 10 feet above the deck of the pier. This block has been removed and the lighthouse has been lowered to the deck of the pier. At the same time the foundation of the tower in the cribwork of the pier is being rebuilt. The work is being done under the direction of Mr. H. A. Gray, Resident Engineer, P.W.D., in connection with extensive repair work on the breakwater, at an estimated cost of \$1,500.

Burlington channel.—Pending the execution of repairs to the inner end of the south pier protecting the channel into Burlington bay, it has been found necessary to temporarily discontinue the exhibition of the red and white lantern lights hoisted on a mast on the pierhead.

Kingsville.—In consequence of damage done by ice to the outer end of the east breakwater pier, it was necessary to remove the outer range light building temporarily, and no light was shown from the pierhead from the opening of navigation until May 15, 1902.

Elliott point.—The character of the illuminating apparatus used in the private range lights here was changed from dioptric to catoptric.

2-3 EDWARD VII., A. 1903

Kincardine.—The front range lighthouse on the north pier was burned down on July 9, 1902. A fixed red light has since been shown from a lantern hoisted on a pole 28 feet high, erected on the site of the tower. A contract has been let for the construction of a new lighthouse having a wooden lantern supported on a galvanized steel open frame.

Flowerpot island.—On the opening of navigation in 1902, the fog bell heretefore in use was replaced by a bell erected on a platform detached from the lighthouse, and giving one stroke every seven seconds. This broke down in the beginning of August, 1902, and was for a time replaced by a hand fog horn. The fog alarm here has never been satisfactory.

Thornbury.—On June 1, 1902, the light shown from the back range mast was changed in colour from white to red, to distinguish it from the town lights, and its strength was increased by substituting for the pressed lens lantern previously used a lantern with a dioptric lens of the seventh order.

Snug harbour and Jones island.—To render them more conspicuous against the backgrounds, which are usually dark, the two buildings from which the Snug harbour range lights, as well as the two from which the Jones island range lights are shown, which all had red stripes down the sides facing the channel, were on the opening of navigation, in 1902, painted white throughout, including roofs of lanterns and dwellings.

Narrow island.—The lighthouse was destroyed by fire on March 30, 1902. On April 27, a fixed white, dioptric light of the 7th order, was shown from a lantern hoisted on a pole erected on the site of the lighthouse. It should be visible 7 miles from all points of approach. The operation of the hand fog horn was at the same time resumed.

A contract has been let for the construction of a new lighthouse, with keeper's dwelling attached.

Hilton.—Information has been received that no private light is now maintained on Hilton wharf.

Pointe aux Pins.—The light on the south extremity of the point has been strengthened by substituting for the reflectors heretefore used extra large reflectors in the axis of the channel both up and down the river, and by adding a light shown through a small pressed lens to reinforce the illumination on other bearings.

It is intended during the coming year to erect range lights here to lead up the reach from the upper ends of the channels dredged from the two canals.

Mouth of Rainy River Range.—The front tower of this range was overturned by ice last spring, and the pier on which it stood was greatly damaged.

In place of the permanent light a fixed white light has been shown during the season from a lens lantern hoisted on a mast erected on the remains of the pier.

A contract has been awarded for the construction of two cribwork piers, to serve as foundations for both lighthouses at this place, the foundation of the back tower also requiring renewal, and the work will be prosecuted on the ice during the coming winter.

MINOR REPAIRS.

The following list, prepared by Mr. P. Harty, inspector of lights, shows the expenditure on repairs and maintenance in Ontario, in 1902 :

Light Station.		Repairs or Supplies.	Cost.
			\$ cts.
Aylmer.....	Installation of acetylene gas plant		81 50
Bamford island	Labour and repairs.....		6 00
Baskin wharf.....	Replacing masts by towers and installing acetylene plant.....		787 55
Bishop bay.....	Building dwelling.....		200 00
	General repairs.....		43 03
	Repairing boat.. ..		15 00
Black Bear island.	Repairs.....		39 90

SESSIONAL PAPER No. 21

Station.	Repairs or Supplies.	Cost.
		\$ cts.
Browns point.....	Repairs to dwelling.....	83 42
Cabot head.....	Repairs to fog alarm.....	13 90
Cape Croker.....	New boat.....	50 00
Channel island.....	Repairs.....	89 15
Chantry island.....	New boat house.....	105 18
Clapperton island.....	Repairing boat.....	18 77
Coburg.....	" oil house.....	31 00
Colchester reef.....	" breakwater.....	1,869 60
Coppermine point.....	Painting.....	7 62
Deep River island.....	New boat.....	45 00
Dorval.....	On account of rebuilding pier.....	443 28
East gap, Toronto.....	Repairs.....	7 00
False Ducks.....	Whitewashing and repairs.....	28 35
Flowerpot island.....	Balance for repairs.....	26 25
Ferris island.....	Hardware.....	17 31
Frenchman bay.....	On account of repairs to foundation.....	126 75
Gargantua.....	New boat and freight.....	44 70
Gibraltar point.....	Lumber for repairing fence.....	40 00
Stonehouse point.....	Repairs to foundation of tower.....	95 00
Goderich.....	Painting.....	29 20
Gull harbour.....	Supplies and freight.....	39 20
Gull island.....	Repairs to pier and whitewashing tower.....	341 54
Hooper point.....	Building dwelling.....	202 40
Jones island.....	Boat.....	40 00
	Repairs.....	127 00
Kagawong.....	Repairs to tower.....	29 80
Kincardine.....	Repairs.....	174 94
Kingsville.....	Painting.....	5 00
Lake St. Louis lightship.....	Lumber.....	15 00
	Boat.....	18 00
Chateauguay lightship.....	".....	18 00
Lamb island.....	Lumber for repairs.....	5 18
Limekiln crossing.....	Painting.....	7 00
Little Current.....	Repairs to tower.....	19 13
	New boat.....	38 00
Lonely island.....	Lumber for wharf.....	25 00
Long point, west end.....	" repairs.....	21 80
Lyal island.....	Boat and freight.....	38 04
Lake St. Francis middle ground.....	Boat.....	30 00
Little Gros cap.....	Boat and freight.....	16 48
Michael bay.....	Making new road.....	30 00
Middle island.....	Painting and repairing.....	37 40
Midland ranges.....	Cutting trees.....	8 00
Nine Mile point.....	Repairs to dwelling and tower.....	56 81
Oka.....	Installation of acetylene plant.....	114 50
Peninsula harbour.....	Painting.....	8 75
Pointe au Baril.....	".....	6 00
Pointe aux Pins.....	Cost of protecting lot and freight on supplies.....	101 38
Point Clark.....	General repairs.....	101 25
Port Maitland.....	Painting.....	6 00
Port Stanley.....	".....	5 00
Presqu'isle ranges.....	".....	7 50
Rainy river.....	Repairs.....	94 43
Red river ranges.....	Hardware and freight.....	72 76
Red rock.....	Repairing roof.....	9 00
River Thames.....	" boat.....	25 00
Rondeau.....	Repairs.....	24 05
Saugeen.....	Boat and labour.....	10 00
Snake island.....	Repairs to boathouse.....	11 35
Snug harbour.....	Boat.....	50 00
South bay point.....	Building scow.....	61 22
Spectacle shoal.....	Lumber and labor.....	102 48
Squaw island.....	Repairs.....	32 83
	Repairing boat.....	13 75
Tomahawk island.....	Repairs and tug hire.....	87 12
Victoria island.....	Lumber for walks.....	17 00
Warton.....	Repairs.....	8 25
Wolfe island.....	Lumber.....	15 00

BUOYS AND BEACONS.

River St. Lawrence 14-foot channel buoys.—The new 14-foot channel in the River St. Lawrence connecting the canals between Lachine and Prescott is marked by buoys which have been established at different times, principally by the Department of Railways and Canals of Canada in 1900 and 1901. These aids to navigation were, on the opening of navigation in 1902 taken over for maintenance by this Department, and both they, and the buoys previously maintained under separate contracts by us, were placed in charge of Mr. J. F. Fraser, of my staff, as district engineer. As the contracts lapse the buoys will be maintained by the Department, with an increase in size and efficiency. The service has already been systematized.

Spar buoys average 24 feet in length, and are placed close to the edges of the channel in 16 to 18 feet water.

Gas buoys are cylindrical, surmounted by slatwork cages, on top of which are the red gas lanterns, showing bright or white lights at an elevation of 9 feet above the water, which should be visible 4 miles.

All red buoys will eventually carry conical cages and automatically occulted lights; and black buoys, can-shaped cages and fixed lights.

The colours of all buoys conform to the international rules. The buoys are numbered between Montreal and Kingston in four sections, in accordance with the same rules; those in Lake St. Louis, including the buoys below the Lachine rapids being lettered **S**; in Lake St. Francis, **F**; those from Cornwall to Prescott, **U**; and the buoys from Prescott to Kingston, **T**.

The numbers and letters indicating districts are placed upon the larger buoys in white characters 12 inches high.

We took over from the Department of Railways and Canals 115 spar buoys and 26 gas buoys, distributed as follows: 6 in Lake St. Louis, 12 in the Lake St. Francis stretch, and 8 above the Cornwall canal. Since the service was taken over we have made the following improvements:

Soulanges Canal.—The buoys at the upper entrance of the Soulanges canal were rearranged, two black spar buoys marking lumps on the east side of the channel being removed when the lumps were dredged off, and a red spar buoy being placed.

St. Regis dyke.—The establishment of range lights on St. Regis dyke resulted in the discontinuance of gas buoy No. 95 F, and spar buoy No. 97 F, and in changing the position of black gas buoy No. 99 F, as detailed in describing the new lights.

Farran point.—On November 7, 1902, red gas buoy No. 38 U, below the lower entrance of Farran point canal, was permanently discontinued.

Head of Farran point channel.—At the same time, red spar buoy No. 40 U, marking the upper entrance to the channel between Farran point and Croil island, was replaced by a red gas buoy, showing a fixed white light.

Vessels bound up light pass on the starboard side of this buoy, but must leave spar buoy No. 42 U on the starboard hand.

Head of North channel.—About 10th November, 1902, red spar buoy No. 156 U, used to mark the northwest edge of the dredged cut at the upper end of North channel, during the progress of the work, being no longer required, was discontinued.

Red gas buoy No. 154 U was moved from its previous location east of the end of the breakwater on the northwest side of North channel upper entrance, to a new position 75 feet due south of the south corner of the terminal crib.

Point Erie.—This point was originally marked by a group of three-spar buoys. In June, these were replaced by a swift current black can buoy, No. 161 U, a much more conspicuous and reliable mark.

Macnair shoal spar buoy.—On April 7, 1902, a spar buoy, painted in red and black horizontal stripes, and numbered 4, was placed by the United States lighthouse authorities in 15 feet of water, near the centre of Macnair shoal, a rocky ledge with

SESSIONAL PAPER No. 21

thirteen and seven-tenths feet water over it at extreme low water, found in 1901, about midway between Macnair island and the Canadian shore, below Brockville, abreast of Morristown, New York.

Waverly shoal gas buoy.—About October 15, 1902, a gas buoy, painted red and black in horizontal stripes, and showing a white light during periods of ten seconds, separated by eclipses of ten seconds' duration, was established by the United States government in twenty feet of water, near the western end of Waverly shoal, eastern end of Lake Erie, in the approach to Buffalo harbour from the westward, replacing a can buoy previously maintained there by the same government. This buoy is probably on the Canadian side of the boundary line, but it is of use only to vessels bound to or from Buffalo.

Middle ground gas buoy.—The maintenance of this buoy was discontinued, the middle ground being sufficiently marked by the new lighthouse, as well as by the three spar buoys established in 1901.

Grubb reef gas buoy.—The gas buoy no longer required on the middle ground has been utilized to mark this danger, on the north side of Pelee passage. It was moored in 25 feet of water on May 16, 1902.

The buoy is a cylindrical iron buoy, painted red, surmounted by a red can-shaped slatwork cage bearing a red lantern, from which an occulting white light is shown, elevated eight feet above the water. The light should be visible four miles from all points of approach. It is cut off automatically for a short time at intervals of about ten seconds.

Limekiln crossing.—The Lake Carriers' Association have placed three red lights on floats moored near the spar buoys maintained by this department to mark the east edge of the Limekiln crossing cut.

Seguin bank gas buoy.—This buoy was found overturned and badly damaged early in November, 1902; it was therefore found necessary to remove it for the remainder of the season. To its moorings a black spar buoy, surmounted by a white flag, was attached. We have had trouble every autumn with this buoy, in consequence of the extremely heavy sea in the locality.

Rains dock gas buoy.—In June, 1902, a gas buoy, painted red with "Rains Dock No. 20" in white, and showing a fixed red light during periods of ten seconds, separated by eclipses of ten seconds' duration, was established by the United States government, in 22 feet of water, in place of the red spar buoy, on the easterly edge of the cut, and about midway between Johnson's point and Rains island shoal float lights, at the middle of the turn from the new cut into Dark Hole passage, River St. Mary. This is in Canadian waters, but marks the channel improved by the United States government for their deep draught vessels.

Lake of the Woods bell buoy.—A steel bell buoy provided by this Department, but placed and to be maintained by the Rat Portage and Keewatin lumber companies, was on the opening of navigation this spring moored on the end of the shoal off the sand hills at the mouth of Rainy river. The buoy was built by the St. John Iron Works, St. John and with its moorings cost \$817.26 delivered.

QUEBEC LIGHTHOUSE DIVISION.

This district extends from the entrance of the Strait of Belle Isle to Montreal, a distance of over 1,200 miles, and includes aids to navigation in the Richelieu river and Lake Memphremagog, as well as in the River St. Lawrence, Saguenay river, Lake St. John, Chaleur bay, Gulf of St. Lawrence, Strait of Belle Isle, north and west coasts of Newfoundland and Labrador.

This division is under the control of Mr. J. U. Gregory, agent of the Department of Marine and Fisheries, at Quebec, who is also shipping master, attends to the requirements of the British Board of Trade in matters of shipwrecked and distressed seamen

2-3 EDWARD VII., A. 1903

and casualties at sea, is receiver of wrecks, supervisor of wharfs, a fisheries officer for the province of Quebec, and superintendent of the signal service.

The agent's staff consists of Mr. L. A. Blanchet, chief clerk and accountant, and deputy shipping master; Mr. George D. O'Farrell, lighthouse inspector; Mr. Alphonse Hamel, clerk; and Mr. P. J. O'Brien, storekeeper and wharfinger, with assistants as required.

The workshops with a large stock of models of various kinds needed for the service are under Mr. Ernest Roy, master carpenter, and Mr. Narcisse Dufour, master-ship-smith. The gas works are under Mr. G. Bélanger.

The steamers at the disposal of this agency during the past year were the chartered steamer *Contest* which attended to gas and other buoys, as well as beacon service from Batiscan to Father point. This vessel has since been replaced by a new and powerful steamer the *Druid*.

The steamer *Aberdeen* supplied the lights in the river and Gulf of St. Lawrence, Strait of Belle Isle, Anticosti, Magdalen islands and Chaleur bay.

The lights above Quebec were supplied by passenger steamer or by rail as proved most economical and convenient.

The buoys between Platon and Montreal are under the supervision of Mr. U. P. Boucher, as engineer, who has the steamer *Shamrock* allotted to him for this service.

There have been put in operation, between Quebec and Montreal, 12 new lights since my last annual report, which now brings the total number of aids to navigation in this division to 200 lights at 121 stations, 6 lightships, 3 of which are supplied with powerful steam fog whistles, one powerful first order siren blown by compressed air, 9 explosive bomb signal stations in connection with lights, 2 steam fog whistles and 9 steam fog horns; 12 gas buoys, 4 of which are supplied with bells, 170 wooden and iron buoys and 59 beacons.

NEW AIDS TO NAVIGATION.

Point Echouerie.—A lighthouse, standing 75 feet inside the extremity of this point, was put in operation on October 15, 1902, and is a square wooden building, with sloping sides, painted white, surmounted by an octagonal iron lantern, painted red. It is 34 feet high from its base to the ventilator on the lantern, the light being fixed white dioptric, elevated 52 feet above high water mark, and visible 12 miles from all points of approach by water. This lighthouse was erected by the department by day's labour, under the supervision of Mr. P. A. Perron, at a cost of \$1,667.73.

Port Daniel.—A lighthouse was put in operation on October 15, 1902, on the outer end of the wharf at this port, and is a square wooden building with sloping sides, surmounted by a square wooden lantern, the whole painted white. It is 29 feet high from the top of the wharf to the ventilator on the lantern, the light being fixed white dioptric, elevated 35 feet above high water mark, and visible 11 miles from all points of approach by water. The lighthouse was erected by the department, under the supervision of Mr. P. A. Perron, at a cost of \$794.47.

Fame Point.—A Hamilton-Foster fog siren was put in operation on October 8, 1902, at this lightstation.

The fog alarm building is a small wooden structure, painted white, with a flat roof, and stands on the edge of the cliff, 180 feet northwestwardly from the lighthouse. The siren is elevated 150 feet above high water mark.

The siren will give blasts through four megaphones, pointed by compass respectively north, northeast, east and southeast, in the following succession:

First, one short blast through the megaphone pointed north; then two short blasts through the megaphone pointed northeast; next one short and one long blast through the megaphone pointed east; and finally two short blasts and one long blast through the megaphone pointed southeast. The interval between the beginning of the signal through one megaphone and the beginning of that through the next is 9 seconds; and the silent interval between the end of one series and the beginning of the next is about 40 seconds, the machinery completing a revolution in 70 seconds.

SESSIONAL PAPER No. 21

It is claimed that a mariner can tell the direction in which the siren bears from him by the relative audibility of the several signals.

If he hears the single blast loudest, or hears only a single short blast, the siren should be due south of him by compass; similarly, if the two short blasts are the loudest, the signal is southwest of him, and so on throughout the series. This system of directing the sound is considered by the department to be in the nature of an experiment, and must not be depended on absolutely until it has been proved, for indicating direction. Even if this fails in practice the siren can be utilized as an ordinary fog alarm.

The fog siren machinery was supplied by the Hamilton-Foster fog signal company of New York, and cost \$5,250. The building was erected by day's labour under the foremanship of Mr. D. Mahon.

Lower Traverse.—On July 29, 1902, a cribwork pier was sunk in 23 feet at low water spring tides, on the extreme north point of the shoals of St. Roch, at the point previously marked by a black can buoy, and about 600 feet southwesterly from the station lately occupied by the Lower Traverse lightship, to form the foundation for a permanent lighthouse.

The pier is rectangular, with two pointed sloping ends; below low water mark it is of wood, and above water it is of concrete and steel.

While construction is in progress, two temporary fixed white lights are being shown from anchor lens lanterns, hoisted on poles, at an elevation of 19 feet above the construction platform, or 29 feet above high water mark, one from its downstream end and one from its upstream end, both visible six miles from all points of approach.

The contractors for this work are Messrs. Dussault & Lemieux, of Lévis, who constructed the caisson in the basin at Quebec, floated it down to the site and successfully sank it there.

The contract price for the construction of this pier is \$80,500.00. In consequence of the extraordinary inclemency of the season, it was impossible for the contractors to complete their work, as they had intended doing.

Ile Verte.—A new light has been established on the extremity of the government wharf, consisting of a pole 16 feet high, with a small shed at its base; and a Felt-hausen & Russel dioptric lantern was installed.

The work was done under the supervision of the Quebec agency at a cost of \$46.51.

Point Nicholas.—The semaphore previously maintained at Cap Santé was removed to Point Nicholas to indicate to pilots the depth of water on St. Augustin bar, now the only point on the river not dredged to at least $27\frac{1}{2}$ feet at low water.

The least depth on St. Augustin bar, in the alignment of Pointe à Basile range lights, as indicated on the Public Works Department chart of the ship channel, is 23 feet, and the gauge is set to the same zero: the semaphore will therefore indicate the depth on the bar.

St. Antoine de Tilly.—On May 1, 1902, three range lights were established at this place.

The front light of the upstream range is fixed white catoptric, elevated 36 feet above high water mark and is visible 6 miles in, and over a small arc on each side of, the line of range.

The lighthouse is a square, wooden tower, with sloping sides, surmounted by a square wooden lantern, painted white, with the lantern roof red. Its height from the base to the vane on the lantern is 30 feet. The tower stands just above high water mark on the west side of the low flat part of St. Antoine point and is distant 2640 feet N. 56 W. from St. Antoine village church.

The back light of the upstream range, which is also the front light of the downstream range (indicating the traverse at the foot of Trembles shoal), is fixed white dioptric, elevated 68 feet above high water mark, and visible 9 miles from all points of approach by water.

The lighthouse tower is a square building with sloping sides, consisting of an open steel framework painted brown, surmounted by a wooden lightroom painted white and

2-3 EDWARD VII., A. 1903

topped with a square wooden lantern painted red. The height of the tower from its base to the vane on the lantern is 65 feet.

It stands upon a cribwork pier 5 feet high, painted black, and is distant 826 feet N. $88^{\circ} 30'$ E. from the front light tower.

The back light of the downstream range is fixed white catoptric, elevated 203 feet above high water mark, and visible 16 miles from all points of approach by water.

The tower is exactly the same as that of the front light of the downstream range, and stands on the crest of the hill behind the point, distant 825 feet S. $65'$ W. from the upstream range back light.

These lighthouses were erected by day's labour, under the supervision of Mr. E. Roy, at a cost of \$4,159.63, which includes \$1,184 paid Messrs. Gould Shapley & Muir of Brantford for two galvanized steel frames.

Ile Marie and Ile Bouchard.—Two range light towers known as the Ile Bouchard range, have been erected in the continuation eastward of the new dredged channel between Verchères point and Cap St. Michel. It is not proposed to put lights in operation in these towers at present, but the buildings are now available for use as day beacons.

The front tower, standing on a high cribwork pier off the east extremity of Ile Marie, is a square wooden building with sloping sides, surmounted by a square wooden lantern.

The height of the tower, from the pier to the ventilator on the lantern, is 28 feet; the focal plane of the light when established will be 39 feet above the river. The pier and tower are white, and the lantern roof red.

The back tower, erected near the south east shore of Ile Bouchard, and distant 8200 feet N. $51^{\circ} 15'$ E. from the front tower, is a square building with sloping sides, consisting of an open steel framework painted brown surmounted by a wooden watchroom painted white and topped by a square wooden lantern painted red. The height of the tower from its base to the ventilator on the lantern is 65 feet. The focal plane of the light when established will be 75 feet above the river.

Verchères traverse.—Two range lights were established on May 1, 1902, to indicate the axis of the ship channel in crossing from the straight cut that now extends between Contrecoeur and Ile aux Prunes to the straight cut that extends between the point above Verchères and Cap St. Michel curve.

The front light, erected on the south shore of the river, 8,570 feet N. $57^{\circ} 50'$ E. from Verchères village church, is fixed white catoptric, elevated 36 feet above the summer level of the river, visible eleven miles in, and over a small arc on each side of, the line of range, and is shown from a square wooden tower with sloping sides surmounted by a square wooden lantern, standing upon a cribwork pier.

The pier and tower are white, and the lantern roof red; the height of the tower from the pier to the ventilator on the lantern is 23 feet.

The back light, distant 1,900 feet N. 70° E. from the front light, is fixed white catoptric, elevated 43 feet above the summer level of the river; visible twelve miles in, and over a small arc on each side of, the line of range, and is shown from an octagonal wooden lantern built on the summit of the second old stone windmill below Verchères. The windmill is whitewashed and the lantern is painted white with red roof. The height of the building from the ground to the ventilator on the lantern is 41 feet.

Verchères village.—Two range lights were established on May 1, 1902, in the prolongation of the axis of the new ship channel dredged between Ile Bouchard and the south shore, which in one will lead from the intersection of their alignment with that of the Contrecoeur range lights to the intersection of their alignment with that of the Verchères traverse range lights.

The front light is fixed white catoptric, elevated 44 feet above the summer level of the river; visible 12 miles in, and over a small arc on each side of, the line of range, and is shown from a square wooden lantern on a square wooden tower with sloping sides standing upon a cribwork pier, 380 feet S. 61° E. from the outer end of the village wharf.

The pier and tower are white and the lantern roof red; the height of the tower from the pier to the ventilator on the lantern is 31 feet.

SESSIONAL PAPER No. 21

The back light, distant 1,950 feet S. $54^{\circ} 30'$ W. from the front light and 1,160 feet S. $88^{\circ} 50'$ W., from the village church, is fixed white catoptric, elevated 85 feet above the summer level of the river, visible 15 miles in, and over a small arc on each side of, the line of range, and is shown from a square tower with sloping sides, consisting of an open steel framework painted brown, surmounted by a wooden watchroom painted white, and topped by a square wooden lantern painted red. The height of the tower from its base to the ventilator on the lantern is 65 feet.

Ile Deslauriers range.—Two range light towers, known as Ile Deslauriers range, were put in operation on May 1, 1902.

The front light, erected on the east shore of Ile Deslauriers, is fixed white catoptric, elevated 37 feet above the summer level of the river, visible eleven miles from all points of approach in the channel, and is shown from a square wooden tower with sloping sides, surmounted by a square wooden lantern, standing upon a cribwork pier. The pier and tower are white and the lantern roof red. The height of the tower from the pier to the ventilator on the lantern is 19 feet.

The back light, erected on the east shore of Ile Ste. Thérèse, and distant 9,430 feet, S. $51^{\circ} 15'$ W. from the front light, is fixed white catoptric, elevated 73 feet above the summer level of the river, visible fourteen miles in, and over a small arc on each side of, the line of range, and is shown from a square tower, with sloping sides, consisting of an open steel framework, painted brown, surmounted by a wooden watchroom painted white, and topped by a square wooden lantern, painted red. The height of the tower from the ground to the ventilator on the lantern is 65 feet.

These lights, as well as the three pairs of range light towers last described, were erected by day's labour, under the foremanship of E. Roy. All are on sites subject to overflow in the spring, and all are therefore built on concrete pier foundations, which increased the cost of construction. The expenditure in connection with the erection of the eight lighthouses was \$9,859.15.

Ile à l'Aigle.—Two range lighthouses have been erected at this station, which in one indicate the axis of the improved ship channel in Varennes traverse.

The alignment marked by the buildings is that of the axis of the widened channel, and is parallel to, but 75 feet north of, the axis of the old channel, marked by the two day beacons formerly maintained at this station.

The front building stands on the north-west shore of the low island, 1,810 feet N. 21° W. from Ile Ste. Thérèse upper range back light, 4,340 feet S. 59° W. from Ile aux Vaches front light and 142 feet S. 46° W. from the old front day beacon, and consists of a pentagonal wooden lantern, painted white, standing on a rectangular whitewashed concrete pier, with a pointed nose, and sloping sides. It is 30 feet high from the ground to the top of the ventilator on the lantern.

The back building stands on the south-east shore of the island, 1,543 feet S. 17° W. from the front one, and is a square wooden tower, with sloping sides, surmounted by a square wooden lantern, the whole painted white, standing on a rectangular whitewashed concrete pier, with a pointed nose and sloping sides. It is 52 feet high from the ground to the ventilator on the lantern. Both lights are fixed white catoptric, visible two miles in the line of range: the front one elevated 30 feet, and the back one 52 feet above the summer level of the river.

The front range building is in the axis not only of Varennes traverse, but also in the axis of Ile aux Vaches traverse, and will ultimately serve as the front light of a range to lead up from the curve off the foot of Ile aux Vaches to Pointe aux Trembles curve. It is intended to remove the Pointe aux Trembles range lighthouses, which no longer mark the middle of the channel, utilizing the back range tower, a new steel structure, for the back light of the new range. This back light will be in the village of Varennes.

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Father point.—The illuminant in the lighthouse at Father Point, was, on July 28, 1902, changed from petroleum to acetylene. This will cause the light to be whiter in colour, and it is claimed that it will be very much more powerful than the oil light.

2-3 EDWARD VII., A. 1903

Lower Traverse.—In consequence of the marking of the point of St. Roch shoal by a cribwork pier, the Lower Traverse lightship was, on August 5, 1902, removed from that locality to its old position, in seven and a half fathoms of water, about one-half mile down stream, in a northeasterly direction from the pier.

Upper Traverse.—On the opening of navigation this year, an occulting gas light was installed in the lighthouse on the pier at the upper end of the Traverse of St. Roch. As this was not sufficiently powerful to be satisfactory, it was on the 1st July changed by substituting for the occulting gas light, a fixed, white, catoptric oil light. The temporary wooden lantern which originally surmounted this tower has been replaced by a polygonal iron lantern painted red.

Cap Santé.—In consequence of the completion of the dredging in the cut across Ste. Croix bar to ship channel depth, the semaphore operated at Cap Santé since 1897, has become unnecessary; its operation has therefore been discontinued and it has been taken down and utilized at Point Nicholas.

St. Antoine upper light.—Three new range lights having been established at St. Antoine de Tilly, it has been found unnecessary to continue the double light, heretofore maintained on the point above St. Antoine, which has been, therefore, permanently discontinued.

Port St. Francis.—The wooden tower, from which the back range light was shown, was destroyed by storm in September, 1901, since which time a temporary light from a lantern hoisted on a mast has taken its place. This temporary light was discontinued on June 21, 1902, and replaced by a light shown from the skeleton steel tower, square in plan, with sloping sides, surmounted by a square galvanized iron lantern, which was removed from Ile aux Prunes when the lights in that district were rearranged.

The height of the tower from the deck of the timberwork pier to the vane on the lantern is 31 feet.

The tower is made more conspicuous as a day mark by having a target of wooden slats attached to the upper half of the upstream face.

The skeleton steelwork is painted brown. The target and upper part of the tower are painted white.

The light is fixed white catoptric, elevated 36 feet above the summer level of the river, and visible 11 miles from all points of approach by water.

Ile aux Prunes.—In consequence of the establishment of the new range lights already described in the improved ship channel passing Verchères, this old light became unnecessary and has been discontinued.

North of Halfway point.—The front lighthouse of this range was overturned by ice in the spring of 1902. Until repairs could be made, a temporary light shown from a lantern hoisted on a pole was exhibited. On July 28, 1902, the light was again shown from the front range tower. In making repairs, the range was improved by placing the tower on a new cribwork pier, built on the edge of the river, 345 feet in front of the old site, so that the front tower now stands S. 17° W., 1,158 feet from the back one. The tower was also decreased in height so that it is now only 13 feet high. The light is elevated 15 feet above high water mark and should be visible eight miles in the line of range. The work of removing and repairing was done under contract by Mr. A. Boivin. His contract price with extras was \$708.

SESSIONAL PAPER No. 21

MINOR REPAIRS at Quebec Stations during the year ended June 30, 1902.

Station.	Nature.	Cost.	
		\$	cts.
Algernon rock	Steel plating to pier.	37	00
	New boat supplied.	35	00
Amherst island.	Stone foundation of dwelling repaired.	11	50
Anticosti:—Heath point.	New windows fitted to tower and a new signal service flagstaff.	153	24
South point.	Repairs to tower and building.	30	50
South-west point.	New boat supplied.	37	50
	Lamps repaired.	42	85
West point.	Repainting and repairs to tower.	147	80
	Repairs to outbuildings.	94	13
	New boat supplied.	50	00
Ash and Bloody islands.	New foundations placed.	234	37
Baie St. Paul.	Tower repainted.	15	00
	New stove supplied.	13	00
Batiscan front tower.	Foundation renewed.	80	35
	Repairs to lantern gallery.	9	40
	Repainting tower.	3	00
Barre-à-Boulard.	Cutting down trees obstructing light.	3	00
	Ladders repaired.	2	40
Bellechasse.	Platform repaired, new steps, trolley ways and boat ways completed.	131	02
	New sail boat supplied.	37	50
	New flat boat supplied.	15	00
Belle isle.	Tower clapboarding renewed.		
	New storehouse erected.		
	Water pipes for extension of power.	1,354	56
Bersimis.	Repairs to building.	2	40
Bicquette.	Well repaired, new pump fitted and boilers repaired.	166	48
Bird rocks.	Boiler and steam winch repaired, iron tank fitted, tower and outbuildings repainted, new landing bridge placed, electric batteries repaired, new boat supplied.	387	15
Brandy Pots.	Repairs to tower and oil store.	16	07
	New halyard for flagstaff.	2	50
Cap au Saumon.	Adjusting fog horn machinery.	283	23
Cap aux Oies.	Repairing lantern gallery, painting tower and buildings.	72	55
Cape Bauld.	Repainting tower and buildings, new landing stage supplied.	57	00
Cape Charles.	Repairing lamps and oil store.	29	30
Cape Chat.	New lamps supplied.	27	50
	Repairs to dwelling.	20	00
Cape d'Espoir.	Lantern gallery and roof repaired.	44	00
	Wire ladder supplied.	5	00
	Assistance repainting.	5	00
Cape Gaspé.	New firing jib supplied.	20	42
Cape Magdalen.	New lanterns supplied.	14	25
Cap de la Madeleine.	Back tower foundation repaired.	27	50
	New steps supplied.	15	75
	Lanterns repaired.	12	05
Cape Norman.	Repairing boiler and supplying new smoke stack.	65	43
Cape Ray.	Boiler tubes supplied.		
	Repairs to dwelling.	57	28
Cape Rosier.	Turning whistle boiler and refitting.	654	83
Carleton.	Repairing lantern and assistance repainting.	25	00
Champlain.	Repainting tower, providing new lamps.	31	85
Chicoutimi.	Repairing wharf light.	2	80
	Front pole light supplied.	14	90
	Repairing Savard range lights.	13	55
	Repairs to back light.	8	00
	Whitewashing towers.	15	56
Contrecoeur.	Repairing towers.	14	90
Crane island.	Assistance painting.	12	00
	Renewing fence.	10	00
Eboulements.	Repairing lantern gallery.	6	25
Egg island.	Repairs, and new iron tank supplied.	129	95
Entry island.	Repairing foundation.	23	00
Etang du nord.	Wire ladder.	10	00
	Repairing tower and dwelling.	115	85
Fame point.	Repairing lighthouse.		
Father point.	Purchasing well and laying pipes.	200	00
	New lamps provided.	25	00
	Repairing dwelling.	15	11
Flower island.	Plate glass.	25	90
	6 hand barrows.	31	10
Forteau.	New boiler, and new spare whistle.	315	33
Gaspé lightship.	Anchor lights.		

2-3 EDWARD VII., A. 1903

Station.	Nature.	Cost.
		\$ cts.
Grand Entry...	Light replaced in position	
Grand river.	Timber breastwork constructed.....	415 00
	Repainting tower.....	10 00
Greenly island.....	New boat.....	57 00
	New lamps; fog alarm machinery.....	85 68
Green island.	Repairing foundations, and painting	62 55
Grondines	Painting.....	9 00
	Repairing front tower.....	28 13
Ile à la Bague.	Rip-rap work around pier.....	20 00
	New boat.....	20 00
	Assistance painting	8 00
Ile à la Pierre.....	New boat.....	35 00
Ile aux Raisins.....	Cutting down trees obstructing light..	10 00
Ile de Grâce	Providing new ventilator.....	7 00
Kamouraska	New canoe.....	35 00
	Repairing boat; new flagstaff....	34 54
Lacolle.....	Painting.....	8 00
Lake Memphremagog...	Painting all the lights on the lake....	72 00
Lavaltrie.....	Steel plating two piers.....	99 44
Lake St. Peter—		
Lightship No. 1.....	New boat.....	40 00
" 2.....	"	38 75
" 3.....	Repairing lantern.....	59 20
Lower Traverse lightship	Steel hull.....	2,194 13
Maquereau point.....	Hull repaired.....	2,070 00
Matane	Repairing road.....	175 00
	Repairing dwelling roof.....	6 00
	New lantern supplied; reflectors renewed	27 35
	Renewing fence around lighthouse	19 05
Métis	Painting tower and dwelling.....	15 00
	Repairing dwelling, oil store and shed.....	25 00
	Repairing lamps	15 75
	New stove.....	13 00
Montee du lac	Renewing gallery and platform	40 90
	New boat and sails.....	44 00
	Repairing reflectors	9 35
Montmagny	Plate glass.....	13 00
Newport.....	Painting.....	6 85
North of Halfway point.	Renewing tops of towers.....	60 00
	Painting.....	7 00
Oak point	Repairing and repainting towers.....	36 00
Paspebiac	Plate glass for lantern.....	21 25
	Repairing buildings.....	21 00
Perceé.....	New flagstaff.....	10 00
	Repainting tower; supplying new ladder.....	24 37
Perroquets.....	New plate glass; painting.....	28 75
Pillars.....	Painting and repairs	55 35
Plateau.....	Repairing dwelling	24 65
	New boat.....	18 00
	6 new brass lamps.....	29 35
	Repairing reflectors	29 66
Pointe aux Citrouilles...	Repairing side steps.....	15 75
Pointe aux Orignaux...	Renewing wharf decking; painting; 6 new lamps.....	59 90
Pointe aux Trembles...	Fencing in lighthouse	50 00
	Repairing and painting.....	20 00
	Resilvering reflectors.....	7 88
	Repairing lamps.....	9 35
Point de Monts.....	Rebuilding cribwork piers.....	325 00
	Repairing electric batteries, lamps, &c.; new boat.....	555 40
	New lamps	

BUOYS AND BEACONS.

Manicouagan shoal.—An automatic whistling buoy on the Courtenay principle has been moored in $34\frac{1}{2}$ fathoms water, $\frac{3}{4}$ mile off this shoal.

The buoy is a red, iron conical buoy surmounted by a 10-inch whistle, sounded by the action of the waves. It will be put out every spring as early as practicable, and removed every autumn when opportunity offers after the first week in November.

SESSIONAL PAPER No. 21

Matane.—On August 19, 1902, an iron bell buoy of United States government pattern was established on the outer end of the shoal off the mouth of Matane river.

The buoy is painted black, is surmounted by a bell rung by the motion of the buoy on the waves, and is moored in 10 fathoms water, one mile north-east of Matane lighthouse.

In consequence of the establishment of this bell buoy, the black can buoy heretofore maintained in that locality has been removed.

Prince shoal.—On August 4, 1902, the middle ground can buoy on Prince shoal, at the entrance to the Saguenay river, was replaced by a gas buoy.

The buoy is of steel, cylindrical, surmounted by a conical slatwork topmark, in which stands the usual Pintsch type lantern. It is painted in red and black horizontal bands, with the words "Prince shoal" in white letters on the buoy. It is moored in 4 fathoms on the south edge of the more westerly of the two patches.

The light is compressed gas on the Pintsch principle, and shows a bright light, occulted at short intervals, at a height of 9 feet above the water. It is visible 4 miles.

On the opening of navigation in 1903 this buoy will be replaced by a combined gas and bell buoy.

Barrett ledge.—The gas and bell buoy marking Barrett ledge has been changed in colour from chequered black and white to red, with the words 'Barrett ledge' in white letters on the body of the buoy, and will hereafter be maintained as a red buoy.

Port Joli shoal.—On August 3, 1902, a gas buoy was established in 5 fathoms water on the channel side of the more easterly of the two $2\frac{3}{4}$ fathom patches lying off Port Joli.

The buoy is of steel, cylindrical, surmounted by a conical slatwork topmark, in which stands the usual Pintsch type lantern. It is painted black, with the words "Port Joli" in white letters on the buoy.

The light is compressed gas on the Pintsch principle, and shows a bright light, occulted at short intervals, at a height of 9 feet above the water. It is visible 4 miles.

Beaujeu bank.—The gas buoy marking the channel over the bar at the west end of this bank, has been changed in colour from white to red and black in horizontal bands, with the words "Beaujeu bank" in white letters on the body of the buoy, and will hereafter be maintained as a middle ground buoy.

The spar buoy which replaces this gas buoy when it is removed for the winter, will hereafter also be changed in colour from white to red and black in horizontal bands.

Grosse isle.—The gas buoy on the western end of Margaret island bank has been changed in colour from yellow to red, with the word 'Quarantine' in yellow letters on the body of the buoy; and the characteristic of the light changed from fixed white to occulting white. Hereafter the buoy will be maintained as a starboard hand buoy, and the light will be occulted at short intervals.

Beaumont reefs.—On August 1, 1902, the black can buoy marking these reefs was replaced by a gas buoy.

The buoy is moored in 5 fathoms water S. 6° W., 7 cables from St. Laurent lighthouse.

The buoy is of steel, cylindrical, surmounted by a conical slatwork topmark, in which stands the usual Pintsch type lantern. It is painted black, with the word 'Beaumont' in white letters on the buoy.

The light is compressed gas on the Pintsch principle, and shows a bright light, occulted at short intervals, at a height of 9 feet above the water. It is visible 4 miles.

Maranda rocks.—A red wooden spar buoy was established on May 31, 1898, off these rocks, and has since been maintained there throughout the seasons of navigation.

The buoy is moored in $3\frac{1}{2}$ fathoms just south of the $2\frac{1}{4}$ fathom sounding marked on the chart, and $\frac{2}{3}$ mile S. 63° E. from Ste. Petronille lighthouse.

Quebec and Platon.—When the buoys marking the ship channel between these points were placed on their stations on the opening of navigation this spring, they were improved by substituting steel buoys for wooden spars wherever previously used, by

2-3 EDWARD VII., A. 1903

increasing the size of existing can buoys and by placing conical buoys on the starboard side of the channel wherever can buoys had previously been used. These buoys will in future be numbered and lettered in white.

Black buoy No. 45 Q, in Cap Santé traverse, has however been discontinued. This has been done at the request of the pilots, who complained that the buoy was too close to the alignment of Ste. Croix range lights and was a menace to ships.

Platon point.—On August 4, 1902, the black can buoy (No. 49 Q) now marking the turn in the ship channel off this point, was replaced by a gas buoy.

The buoy is moored in 5 fathoms water, $\frac{1}{10}$ mile northward of the outer end of Platon wharf.

The buoy is of steel, cylindrical, surmounted by a conical slatwork topmark, on which stands the usual Pintsch type lantern. It is painted black, with the word 'Platon' in white letters on the buoy.

The light is compressed gas on the Pintsch principle, and shows a bright light occulted at short intervals, at a height of 9 feet above the water. It is visible 4 miles.

Bécancour.—The day beacon which in line with the spire of Ste. Angèle church shows the middle of the channel between Ile Bigot and Bécancour point has been moved and now stands 15,900 feet N. $64^{\circ} 15'$ E. from Ste. Angèle church.

The beacon is diamond-shaped, of latticework, 10 feet long on each side, supported on a pole 30 feet high. It is painted black with a white border $2\frac{1}{2}$ feet wide around it.

Ile Ste. Thérèse channel.—On the opening of navigation in the spring of 1903, the following changes in the ship channel buoys will be made.

A new black spar buoy, bearing the number 139 M, will be moored in 30 feet water on the east edge of the dredged channel between Ile Ste. Thérèse and Ile à l'Aigle, opposite Ile à l'Aigle front lighthouse.

Black spar buoy No. 147 M will be moved 180 feet south of the position it now occupies, to mark the north-east edge of the dredging near the lower end of Ile aux Vaches traverse.

Black steel can buoy No. 149 M will be moved 130 feet south to mark the angle between the edge of Ile aux Vaches traverse and Pointe aux Trembles channel.

Montreal.—When the buoys placed by the Harbour Commissioners in the port of Montreal were put out on the opening of navigation this year, the following changes in their locations were made:—

Black spar buoy No. 213 M, was moved 720 feet S. 8° W., to a new position, opposite Jacques Cartier pier and opposite the outer end of MacKay pier.

Black spar buoy No. 217 M, was moved 612 feet N. 87° E., to a new position opposite Alexandra pier.

Black spar buoy No. 215 M, was discontinued.

Red spar buoy No. 190 M, Hochelaga wharf, was discontinued.

NOVA SCOTIA LIGHTHOUSE DIVISION.

This division, in charge of Mr. J. Parsons, agent of the Department in this province, comprises 207 lighthouses, exhibiting 218 lights, 1 light vessel, 17 steam fog alarms, 1 explosive fog-alarm station, 32 hand fog-horn stations, 2 fog-bells, 23 automatic whistling buoys, 18 automatic bell-buoys, 128 iron or steel buoys, about 820 spar and other small buoys, 10 day beacons, 17 life saving stations, 5 marine hospitals, 2 humane establishments, and 8 signal stations. The steamer *Newfoundland* chartered till November, 1901, the *Aberdeen* during winter, and the *Lansdowne* and the *Stanley* during spring and summer, were utilized as lighthouse and buoy tenders.

The stations have been inspected by Mr. C. A. Hutchins, superintendent of lights, the boilers and machinery at the fog-alarm stations have been examined by Mr. D. Stevens, inspector of government steamboats, and the life-saving stations and apparatus have mainly been visited and cared for by Capt. Bloomfield Douglas, R.N.R., Naval

SESSIONAL PAPER No. 21

Assistant. The coast buoys have been placed and changed by the government ships chiefly under direction of Supt. Hutchins.

The hundreds of harbour buoys are mostly under contract with reliable local men. The wharfs have been inspected by the agent personally.

NEW AIDS TO NAVIGATION.

Wolfville.—A lighthouse at the junction of Mud creek and Cornwallis river was put in operation on March 1, 1902.

The lighthouse stands on the north-west corner of the government wharf. The building is a square wooden tower, with sloping sides, surmounted by a square wooden lantern, and is painted white. It is 22 feet high from its base to the top of the vane on the lantern.

The light is fixed red, elevated 20 feet above high water mark, and should be visible 6 miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order.

The work was done by Mr. D. A. Munroe. His contract price was \$450.

Digby pier.—A small wooden tower is in course of construction at the outer end of the government pier at Digby, to replace the pole light hitherto maintained there. The building is being erected by Mr. John Rooney, of Granville ferry, under contract for the sum of \$393.

Port Felix.—A lighthouse on the southeastern end of Hog island, Port Felix, in the county of Guysborough, was put in operation on July 1, 1902.

The building consists of a square wooden dwelling with a square wooden lantern rising from the middle of the cottage roof. The whole building, including the lantern, is painted white, and is 37 feet high from its base to the vane on the lantern. The site is 12 feet above and 80 feet northerly from high water mark.

The light is fixed white, is elevated 42 feet above high water mark, and should be visible 8 miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order.

This work was erected by the department by day's labour, under the supervision of Mr. James A. Hall as foreman of works, and cost \$2,517.58.

Louisburg fog alarm.—A first order siren, operated by compressed air, established at the light station on the north side of the entrance to Louisburg harbour, Atlantic coast of Cape Breton, was put in operation on February 18, 1902.

A small white house containing the siren machinery stands on the summit of a small knoll that lies on the edge of the cliff 400 feet S. 60° E. from the lighthouse. The siren is elevated about 50 feet above high water. The engine house, of red brick, with shingled roof painted brown, is situated 35 feet north of the siren house, and is hid len by the knoll from the water.

The siren gives double blasts every two minutes, consisting of a low, followed by a high, note.

Great Bras d'Or.—Two range lights are in course of construction at Duffus point, on the northern side of Boularderie island, entrance to Great Bras d'Or, to guide vessels clear of outlying shoals. The work is being done under contract by Mr. Peter McFarlane.

Bourgeois inlet.—A small wooden tower is being built at the mouth of Bourgeois inlet in the county of Richmond, Cape Breton, to guide vessels into the harbour. The work is being carried on by Mr. Edward Doyle, of Poulamon, under contract, for \$415.00

Henry island.—A lighthouse, erected on the highest part of Henry island, at the entrance to Port Hood, will be put in operation about December 1, 1902.

The tower is an octagonal wooden building, with sloping sides, surmounted by a red polygonal iron lantern. The tower is 53 feet high from its base to the vane on the lantern, and its faces are painted alternately white and red. The keeper's dwelling stands 165 feet south from the lighthouse, and is a wooden building painted white.

2-3 EDWARD VII., A. 1903

The light will be a group-revolving white light, having three periods of maximum intensity, with intervals of ten seconds between their points of greatest brilliancy, followed by an interval of forty seconds, during the greater part of which the light will be eclipsed, the apparatus completing a revolution, or phase, in one minute. It is elevated 240 feet above high water and should be visible 22 miles from all points of approach by water. The illuminating apparatus is catoptric.

The work was done under contract by Mr. Jos. McDonald, whose contract price was \$3,489.

IMPROVEMENTS AND CHANGES IN EXISTING AIDS.

Kingsport.—The lighthouse at the outer end of the government pier, which was removed temporarily from its site while the pier was being repaired, has been replaced in its former position, and the temporary lantern light discontinued.

Apple river.—The illuminating apparatus in the lighthouse which was catoptric has been changed to dioptric of the seventh order.

Brier island.—On November 1, 1902, the light shown from the lighthouse on the west point of Brier island, on the east side of the Bay of Fundy, in the county of Digby, Nova Scotia, was changed from a fixed white light to a group-revolving catoptric white light, showing four periods of greatest intensity with intervals of twelve seconds between their points of greatest brilliancy, followed by an interval of twenty-four seconds, during the greater part of which the light will be eclipsed, the apparatus completing a revolution, or phase, in one minute.

The light is elevated 92 feet above high water mark, and should be visible 15 miles from all points of approach by water.

Cape Sable.—On November 1, 1902, the light was changed to a third order dioptric white light, giving flashes of about one-third second duration, at intervals of five seconds.

Brooklyn.—In consequence of further damage to the upper portion of the government pier, the fixed green light shown from a lantern on a pole on the pier, was moved about 100 feet shoreward, close to the shore end of the pier.

Canso.—The signal staff from which storm warnings are displayed in Canso harbour, was, in December, 1901, moved from the position in which it stood, 400 feet N. 27° W. from the new Roman Catholic church, to a new site 900 feet S. 39½° E. from the church.

Petitdegrat.—On November 1, 1902, the illuminating apparatus in the lighthouse on Mouse island was changed from catoptric to dioptric of the seventh order.

Jerseyman island.—A dioptric lens of the seventh order has been installed in the lighthouse, replacing the catoptric apparatus heretofore used.

Cape la Ronde.—On December 1, 1902, the fixed white light heretofore shown from the lighthouse on the summit will be discontinued and replaced by a flashing white light.

The new illuminating apparatus is dioptric of the fifth order, and will show single flashes of three-quarter second duration, with intervals of six and three-quarter seconds between the flashes, that is, one flash every seven and a half seconds.

Isle Ouetique.—A dioptric lens of the seventh order has been installed in the lighthouse, replacing the reflector heretofore used; and a hand fog-horn has been furnished to answer the fog signals of vessels.

Hawk islet.—A hand fog-horn has been established at the light station, which will be used in answer to the fog signals of vessels whenever they are heard from the station.

Cranberry head.—The steam fog-horn was out of service from February 19 to September 12, 1902. It is intended to discontinue the operation of this signal when the new siren at Low point is in operation.

SESSIONAL PAPER No. 21

MINOR repairs during year ended June 30, 1902.

Station.	Nature of Repairs.
Church point	Shingling and repairs to tower.
Westport	Chimney built in kitchen ; repairs to main building.
Bunker island	New boat supplied.
Cape Fourchu	New glass fitted.
Candlebox	Crib work built.
Peases island	Glass fitted in lantern ; walls shingled and doors fitted to lighthouse.
Fish island	Sheathing inside of dwelling.
Argyle	Re-shingling boathouse and kitchen.
Seal island	Re-shingling oil store and blacksmith shop ; repairs to oil store, tank house, blacksmith shop and boat slip.
Bon Portage	Breakwater lengthened, slip repaired.
Barrington lightship	Overhauling and repairs.
Baccaro	Lantern glass renewed.
Page island, Port Latour	Tower reshingled, drain laid.
Negro harbour range	Re-shingling outer tower.
Cape Roseway	Plastering and re-shingling dwelling ; walls of lighthouse and dwelling repaired ; tramway built.
Gull rock	Repairs to lighthouse.
Little Hope	Crib-work and coal shed built ; repairs.
Fort point	Crib-work and a W.C. built.
Port Medway	Re-shingling lighthouse ; repaired lantern.
Lahave	Repairs to dwelling.
Moser island	Re-shingling and repairs to dwelling.
Hobson island	Repairs to breakwater and oil store.
Quaker island	Door fitted to kitchen.
Peggy point	Repairs to lantern and cistern.
Betty island	Chimney rebuilt.
Terence bay	Shed repaired ; Chance lantern (Anchor lens) supplied.
Chebucto head	Repairs to lantern and slip.
Mauger beach	Slip extended ; repairs to tower ; new lantern erected.
Devil island	Re-shingling boathouse, kitchen and porch of lighthouse.
Jeddore rock	Rocks blasted ; a closet built.
Egg island	Slip repaired ; concrete walk built.
Pope harbour	Boat slip renewed ; protection wall repaired.
Country harbour	Roof of dwelling re-shingled ; sheathed two rooms.
Wedge island	Repairs to dwelling and tower.
Queensport	Sheathing porch.
Sand point	Oil store re-shingled.
Jerseyman island	Cistern built ; re-shingled and repaired oil store and lantern.
Arichat	Repairs to building ; cistern and crib-work built.
Petitdegrat	Repairs to lighthouse and oil store ; roof of kitchen re-shingled.
Isle Ouetique	Repairs to dwelling and tower ; re-shingling dwelling and oil store ; two fences erected.
Hawk island	Road built of crib-work and plank ; storm window fitted.
Mainadieu	Concrete foundation built.
Bird island	Derrick repaired.
Black Rock point	Re-shingling dwelling ; repairs to oil store and breakwater.
Gillis point	Base board fitted in kitchen.
Freestone island	Addition built to breakwater, ballast.
Ingonish island	Repairs to lantern and porch.
Cape North	Re-shingling dwelling, oil store and lighthouse.
St. Paul island—	
S.W. light	Storehouse built ; repairs to porch of keepers dwelling.
Main station	Slip repaired.
N.E. light	Barn and oil store re-shingled ; cistern built ; sheathed room in dwelling.
Cheticamp	Dwelling house and porch re-shingled.
North Canso	Building reshingled ; repairs to building and lantern.

BUOYS AND BEACONS.

Chebogue ledge.—The can buoy was reported adrift on February 4, 1902. It was replaced in position in September, 1902.

Mackerel shoal conical buoy, *Southwest Bull* can buoy and the automatic and bell buoys off *Louisburg* are taken up for the winter, usually in December or January, and replaced on the disappearance of ice the following spring. When they are removed, spar buoys are attached to their moorings.

2-3 EDWARD VII., A. 1903

Little Dorer.—The following spar buoys have been established: they will be taken up every winter: In the eastern entrance to Little Dover run:

A red spar buoy on south end of outside breaker.

A red spar buoy on Fanning shoal.

A black spar buoy on Moll shoal

In the south-western entrance:

A black spar buoy on Tomcod shoal, south-west from Millstone.

A red spar buoy on Harding point ledge.

A black spar buoy on Millstone ledge.

West shore entrance:

A black spar buoy off Walsh point.

A red spar buoy on Sheep island shoal.

A black spar buoy on shoal north-west of Burnt island.

Janvrin shoal.—A steel conical buoy, painted red, was established on July 1, 1902, off Janvrin shoal, on the western side of Janvrin island, at the southern entrance to the Gut of Canso.

The buoy is moored in about 12 fathoms of water, about $\frac{3}{4}$ mile N. 76° W. from the extremity of Janvrin point, and is to be left on the starboard hand by vessels proceeding northerly into the Gut of Canso, or for Lennox passage.

It will be maintained each year during the season of navigation, being taken up for the winter.

This buoy and the black can buoy on the opposite shore, off Eddy point, define the safe navigable water in this channel between Eddy and Janvrin points.

Point Aconi.—An automatic whistling buoy, on the Courtenay principle, was established on July 1, 1902, in place of the can buoy previously maintained. It will be taken up every winter.

The buoy is a conical buoy, painted black, with Point Aconi in white letters, and is surmounted by a 10-inch whistle which is sounded by the action of the waves. It is moored in about 15 fathoms water, about $1\frac{3}{4}$ miles N. 73° E. from the extremity of Point Aconi.

Gabion Shoal.—The wooden spar buoy heretofore maintained off the north extremity of Gabion shoal has been replaced by a steel can buoy painted black.

This buoy is maintained each year during the season of navigation, taken up at the close of navigation, about the end of December, and replaced again on the disappearance of ice from the coast in the spring.

St. Paul island beacons.—The beacon which in one with the tidal gauge house on St. Paul island, led clear of Big Dick rock, has been taken down.

The following new beacons have been erected on the island for the guidance of mariners calling at Atlantic cove with supplies and mails, as well as for small schooners and fishing vessels:

Two beacons with white circular tops have been placed on the hill in the bight of the cove above the tidal gauge house, in line bearing S. 35° E. Big Dick rock is given a wide berth by the range line of these beacons.

Two diamond-shaped white beacons about 70 yards to the eastward of the Superintendent's residence. In line bearing N. 10° E. they clear the foul ground off the rocky point below the fog alarm, and indicate the best anchorage in 18 fathoms when their alignment intersects that of the two first-mentioned circular-topped beacons above the tidal gauge.

NEW BRUNSWICK LIGHTHOUSE DIVISION.

The New Brunswick division comprises all the lighthouses and other aids to navigation within the boundaries of the province both on the bay of Fundy and on the gulf of St. Lawrence coast. The large buoys maintained by the government on the Nova Scotia coast of the bay of Fundy are attended to by the steamer *Lansdowne*, under the direction of the New Brunswick agent, but are otherwise under the control of the Nova Scotia agent.

SESSIONAL PAPER No. 21

This division is under the charge of Mr. F. J. Harding, agent of the department at St. John, N.B.

The lights and other aids to navigation were inspected by Mr. John Kelly, inspector of lights.

There are in this agency 126 lighthouses, 2 lightships and 12 steam fog-alarms under the charge of 99 lightkeepers and engineers.

The method of supplying the lights varied in accordance with locations. The supplies for St. John river, Grand lake and Washademoak lake lights were shipped by direct steamers, and a separate bill of lading furnished for each station.

The supplies for the Miramichi river lights were sent by the lightship *Frederick Gerrig* and by regular line of steamers or schooners trading to the different points.

The bay of Fundy lights were supplied by the steamer *Lansdowne*, and those in Chaleur bay were supplied by rail. In all cases the supplies have been delivered in the most convenient and economical way.

NEW AIDS TO NAVIGATION.

Oak point.—The light shown from a lantern on a mast on Oak point, river St. John, has been replaced by a stronger light shown from an inclosed lighthouse tower, built 56 feet outside the site of the old light, on the shore on the east extremity of the point.

The light shown from the new tower is fixed white dioptric, elevated 49 feet above high water mark, and visible 12 miles from all points of approach.

The lighthouse is a square wooden building with sloping sides, painted white, surmounted by a square wooden lantern painted red. The height of the building from its base to the ventilator on the lantern is 48 feet. The old mast and shed have been taken down.

Anderson hollow.—This lighthouse was destroyed by storm on January 12, 1902, and a temporary light was established to replace it. It is shown from a lens lantern hoisted on a mast erected where the lighthouse stood on the outer end of the breakwater.

The light is fixed red, elevated 23 feet above high water mark, and visible 4 miles from all points of approach.

A new lighthouse is in course of construction on shore opposite the outer end of the breakwater.

Cape Tormentine.—Range lights, with a fog-bell, have been established on this pier, to guide the steamer *Stanley* while making winter passages between that point and Prince Edward Island. They are put in operation whenever the *Stanley* is running, and discontinued whenever the *Stanley* is not running.

The front light is fixed red catoptric, shown from a window in the eastern gable of the new freight shed on the railway pier. It is elevated 17 feet above high water mark, and visible 8 miles over an arc of 45° on each side of the line of range. The freight shed is an unpainted wooden building 100 feet long and 20 feet high, standing on the south-east corner of the pier. Over the ridge board of the shed is erected a diamond-shaped day beacon of slatwork, 10 feet high by 8 feet wide, painted white. This beacon, in line with Cape Tormentine Baptist church steeple clears the south end of Jourimain island shoal, in at least $5\frac{1}{2}$ fathoms.

On the east end of a small building, on the south edge of the long portion of the pier, 297 feet inside its north-east corner, is hung a large bell, which is rung by hand as a signal to the *Stanley* in thick weather.

The back range light is shown from the cupola of the iceboat house, which stands on shore at the inner end of the pier, close to its north side, and distant 2,550 feet S. 87° W. from the front light. It is fixed red catoptric, elevated 34 feet above high water mark, and visible 9 miles from all points south of Jourimain island shoal.

The building is a square wooden building, painted drab, surmounted by a cupola or lantern rising from the middle of the ridge roof. It is 40 feet high from its base to the ventilator on the lantern.

2-3 EDWARD VII., A. 1903

These aids to navigation were established by Mr. Lord, Agent of the Department at Charlottetown.

Buctouche bar.—A lighthouse on the southern extremity of Buctouche sand bar was put in operation on October 10, 1902.

The lighthouse is a square wooden building, surmounted by a square wooden lantern rising from the middle of the cottage roof. The building and lantern are painted white. The lighthouse is 35 feet high from its base to the ventilator on the lantern, and is located on land 4 feet above high water mark.

The light is fixed white dioptric, elevated 38 feet above high water mark, and visible 11 miles from all points of approach by water.

The work was done by Mr. G. W. Palmer, of Kars, whose contract price for the building was \$1,289.

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Midjik bluff.—On May 1, 1902, this light was changed from catoptric to dioptric of the seventh order.

Gannet rock.—The periodicity of the fixed and flashing white light at this light-station has been changed, and the light now shows bright 30 seconds, followed by an eclipse of $3\frac{1}{2}$ seconds duration, then a bright flash of 3 seconds duration, followed by an eclipse of $3\frac{3}{4}$ seconds duration, the total period being 40 seconds.

Partridge island.—A new observatory has been erected at this station by Messrs. J. W. Long & Son, at a cost of \$318 and a new flag pole was erected by Mr. Alexander Long at a cost of \$111.

The fog alarm boilers were repaired by Mr. James O'Donnell, at a cost of \$228.34.

The water supply ran low and 35,000 gallons were supplied for fog-alarm boilers at a cost of \$371. The water tank was cleaned out and repaired at a cost of \$62.30, by Messrs. J. W. Long & Son. Sundry small repairs cost \$27.75.

Zephyr rock lightship was placed on her station in Shediac harbour for the autumn, as usual, on October 3, 1902, and will be maintained thereon until the close of navigation.

Richibucto beach.—The channel through the bar across the entrance to Richibucto harbour having been shifted westwardly by the winter gales or the action of ice, the range lights leading across the bar have been moved 141 feet westwardly from the positions which they occupied in 1901.

The front light mast stands 115 feet back from the water's edge, and the light is elevated 31 feet above high water mark.

The back light mast stands 275 feet S. $8\frac{1}{2}^{\circ}$ W. from the front one, and is elevated 34 feet above high water mark.

The channel range light masts, carried away in November, 1901, have been replaced. They are fixed white lights, shown from lanterns hoisted on white masts having white sheds at their bases.

The front light mast stands beside the most westerly lobster factory stage on the north shore of the south beach. The mast is 30 feet high, and the light is elevated 27 feet above high water mark.

The back light mast is located at high water mark on the north shore of the south beach, N. 73° W. 466 feet from the front one. The mast is 35 feet high, and the light is elevated 32 feet above high water mark.

The lights shown from all four masts have been strengthened by substituting for the small lanterns previously used, lanterns with dioptric lenses of the seventh order.

Stonehaven.—On September 1, 1902, this light was changed in colour from red to white.

SESSIONAL PAPER No. 21

MINOR REPAIRS.

Name of Station.	Nature of Repairs.	Cost.
		\$ cts.
Beacon light, St. John ..	Repairs fog-bell machinery and new bell.....	235 40
Belloni point.....	Shelter shed built.....	100 00
Big Duck island	Fog-alarm boiler retubed and new damper.	151 38
Hatfield landing light...	Mast and pier repaired.....	7 50
Cassie cape light.....	Foundation wall repaired.....	15 00
Cox point light.....	Pier repaired—new timber.....	8 00
Cape Enrage fog-alarm..	Boiler retubed, 200 feet new fencing.....	
Cape Spencer light.....	Repairs to road.	35 00
East head Musquash l'g't.	New copper smoke stacks, \$23.79; 6 reflectors resilvered, \$120...	143 79
Goose lake light.....	Repairs revolving gear.	
Gannet rock light.	Revolving machinery nearly all renewed.....	
Grand Manan fog-alarm.	Boilers repaired, \$236.04; new tubes, \$103.20; road repairs, \$9.37	348 61
Grand harbour light.....	Repairs to dwelling.	44 05
Jemseg light.....	Mast and shed repairs.....	4 00
Little Shippigan.....	New shed for boat and buoy storage.....	70 00
Machias Seal island fog alarm	New chimney and general repairs.....	
Miscou fog-alarm	Steam pump and operating engine repaired.....	
Newcastle light.....	Trees obstructing were cut down	3 00
Neguac gully light.....	Protection pier rebuilt	110 00
Oak point, St. John river	New boat supplied.....	10 00
Pokesudie light....	New boat supplied, \$20; repairs to road, \$5.....	25 00
Pokemouche light.....	New boat furnished, \$40; new brass shade frames, \$12.....	52 00
Preston beach lights.....	Repairs boat and car, \$7; assistance painting, \$1.50.....	8 50
Point Lepreau light.....	New wire rope for revolving gear, \$11.04; lantern repairs, \$5; cedar posts and fence, \$14.40; lumber, \$45.91.....	76 35
Point Lepreau fog-alarm	Patches on boilers and general repairs.....	
Pea point light.....	One reflector resilvered.....	10 00
Quaco fog alarm.....	Boiler partially retubed.....	
Stone haven light.....	Assistance painting, \$5; building new steps, \$6.....	11 00
Swallowtail light..	Derrick, tramway, walk and general repairs.....	
South Tracadie light....	New planking and extension to abutment.....	23 00
Sheldrake island light...	Boat repairs and posts under beacon.	14 00
Southern Wolf light.....	New boat purchased, \$60; boat hire, 3 years, \$10.....	70 00
Southwest head light....	Repairs to highway.....	50 00
Tracadie light north.....	Building of sand breaks.....	50 00

EXPENDITURE ON BUOYS.

Point Pringle.....	New mooring chain.....	64 69
Net Rock and Big Duck island	New mooring chain and blacksmith work.	208 57
Lurcher automatic	New chain and fittings.....	183 82
Blonde rock.....	New chain.	454 16
	Repairs to buoy.	217 53
Buck rock can	New chain.....	64 69
Dorchester buoys.....	New chain.....	37 29
Bay du Vin buoys.	New chain.....	50 64
Dalhousie buoys.....	New chain and fittings.....	56 71

BUOYS AND BEACONS.

St. Andrews.—The upper part of a timberwork beacon, in the form of the fustrum of a square pyramid, which stood on the west entrance to this port, was carried away by a storm on January 12, 1902, and the remaining portion covers about one hour before high water.

Until repairs are made, it is marked by a pole with a keg on top, set upright in the foundation of the block, and standing above high water mark.

Navy island.—On July 12, 1902, the black spar buoy maintained off the southeast end of Navy island, was replaced by an iron can buoy, painted black.

2-3 EDWARD VII., A. 1903

The buoy is moored in 5 fathoms water, 3 cables south of the southeast end of Navy island.

Bell boat.—The St. John Iron Works tender of \$2,548 for a new bell boat was accepted, and the firm constructed the boat, which was placed in position off Partridge island by D. G. S. *Lansdowne*. The new boat is giving every satisfaction.

Jourimain island.—A red spar buoy is moored on the tail of Jourimain island shoal, to mark it during winter, in the position occupied by a conical buoy in the open season of navigation.

Huckleberry gully.—A wooden can buoy, painted red, has been established in $1\frac{1}{2}$ fathoms water on the starboard side of the entrance to this gully, at a distance of about $\frac{2}{5}$ mile from shore.

The black buoy about $\frac{1}{2}$ mile east of Huckleberry island, marking the entrance to Huckleberry gully, is no longer maintained.

Vin harbour.—The following two buoys have been established: A red spar buoy, moored in $1\frac{3}{4}$ fathoms water about $\frac{2}{5}$ mile off Mills point. A red spar buoy, moored in $1\frac{3}{4}$ fathoms water about $\frac{1}{2}$ mile off Gardner point.

Miramichi.—To bring the buoyage of Miramichi bay into conformity with the rules for buoyage recommended by the Washington Marine Conference of 1889, and adopted by Canada, the following red buoys marking the best channel across Horseshoe bar have been changed in shape from can to conical:

No. 4, the lower red buoy on the bar, in 3 fathoms;

No. 8, in 3 fathoms;

No. 10, in 4 fathoms; and

No. 12, the upper red buoy on the bar, in 4 fathoms.

Shippigan harbour.—In entering Shippigan harbour, red buoys are on the starboard hand in entering from either end. The change in the colouring of the buoys occurs at the Government wharf, which is situated in Shippigan harbour near the point marked on the charts 'Observation spot.'

Bathurst harbour.—The outer end of the channel over the bar is marked by a red conical buoy, which is now moored to the eastward of the alignment of the range lights. Between this buoy and Caron point the best water is marked by a red cask buoy, a black cask buoy and a red conical buoy. Inside the point the east and west channels in the harbour are marked by cask buoys, and by casks set on clusters of piles, all coloured in conformity with the International regulations for buoyage.

During the year 9 conical buoys 5 feet 6 inches in diameter made by I. Matheson & Co. Ltd., at a cost of \$1,305, and 9 conical buoys 7 feet diameter constructed by the Robb Engineering Co., at a cost of \$2,196, were furnished to the agency to increase the stock of spare buoys.

PRINCE EDWARD ISLAND LIGHTHOUSE DIVISION.

This division which embraces the whole province, is under the charge of Mr. Artemas Lord, agent of the department at Charlottetown, who also acts as inspector of lights. The general routine of the office work has been performed by the agent, assisted by Mr. Laurence W. Watson, as clerk, and Mr. H. W. Mutch, as messenger. The work of building new light houses and superintending more extensive repairs at existing stations has been done under Mr. M. Walsh, as foreman of works. Under the agent's instructions, Mr. Walsh is also warehouseman for the lighthouse stores in Charlottetown.

There are in the division 66 lights at 39 stations, and one fog-horn, under the charge of 45 keepers. There are three automatic whistling buoys and one bell-buoy. The majority of lights are situated on headlands and serve the general purposes of navigation, the remainder being harbour lights intended particularly for the benefit of fisher-

SESSIONAL PAPER No. 21

men. There are thirty harbours buoyed under the system of three year contracts, and seven in which buoys are maintained by the department under the local harbour masters.

All the stations on the island were inspected by the agent on the annual supply trip last summer, which was made on the D.G.S. *Brant*.

NEW AIDS.

Wood island harbour.—Range lights were established and put in operation on September 6, 1902 to lead into Wood island harbour.

The front range tower stands on the breakwater on the south side of the east entrance to the harbour, 50 feet from its outer end. It is a square wooden building, with sloping sides, surmounted by a square wooden lantern, the whole painted white. The height of the tower from its base to the top of the ventilator on the lantern is 19 feet.

The light is fixed red, elevated 18 feet above high water mark, and is visible 6 miles from all points of approach by water. The illuminating apparatus is a pressed glass lens.

The back range tower stands on the gravel beach, 700 feet N. 85° W. from the front tower. It is a square wooden building with sloping sides, surmounted by a square wooden lantern, the whole painted white. The height of the tower is 33 feet from its base to the top of the ventilator on the lantern.

The light is fixed red catoptric, elevated 33 feet above high water mark, and is visible 7 miles in the line of range.

These buildings were erected by the agent by day labour, under the supervision of Mr. M. Walsh, and cost \$204.92.

CHANGES AND IMPROVEMENTS IN AIDS.

Murray harbour.—Arrangements have been made to reduce the height of the front range tower on Beach point 10 feet in November, 1902, in order that the back light may be more easily distinguished. The front tower will then be 20 feet high, and the light will be elevated 23 feet above high water mark.

Miminegash.—The red sector shown from the front range lighthouse on the outer end of the south breakwater now shows over an arc of $78\frac{1}{2}^{\circ}$ between the bearings of N. 79° E. and S. $22\frac{1}{2}^{\circ}$ E. Between the southern edge of this sector and the land to the southwestward of the lighthouse no light shows. The white sector now shows between the bearings of S. $22\frac{1}{2}^{\circ}$ E. round through south to S. 41° W. over an arc of $63\frac{1}{2}^{\circ}$, which includes the line of range.

The illuminating apparatus consists of a compressed glass lens reinforced by silvered reflectors.

The illuminated sector of the back lights has been increased so that it now shows from N. 79° E. round through east and south to about S. 41° W., or until cut off by the high land to the northeastward of the lighthouse.

This change was made to enable small vessels to find the entrance from the southward to anchorage behind Miminegash reef.

Sea Cow head.—In April, 1902, a new cast iron 10½ foot lantern replaced the worn out and inferior lantern formerly in use. When the change was made the tower was put in thorough repair, resingled and a new platform deck built.

2-3 EDWARD VII., A. 1903

MINOR Repairs Prince Edward Island.

Place.	Nature.	Cost.	
		\$	cts.
Cape Bear.....	Fence reset and drain repaired		
Pannure island..	Fence repaired, new boat and oars	15	00
Cardigan river..	Fence repaired.....	16	80
Annandale.....	Protection work	20	00
New London.....	Filling in work.....	7	20
Miminegash	Repairs to tower.....		
Cape Egmont	New wire fence built.....		
Indian point..	Verandah repaired.....		
Sea Cow head	Tower repaired.....		
Blockhouse point	Fence repaired		
Brighton beach	Front light fenced in, towers repaired.....		

BUOYS AND BEACONS.

Miminegash reef.—The southern channel inside the reef is marked by three spar buoys, painted in black and white stripes, and moored as midchannel buoys.

Wood island harbour.—To mark the best water in the new channel created by the extension of the south breakwater changing the direction of the outgoing current, a spar buoy, painted in black and white bands, has been placed 600 feet S. 79° E. from the front range lighthouse, in 9 feet water at low tide.

A day beacon, painted white, consisting of a diamond-shaped topmark on a spar 20 feet high, has been established on the western end of the western island of the two Wood islands, 2,500 feet N. 67½° W. from the main lighthouse.

Spithead.—The black can buoy maintained on the west side of the entrance to Charlottetown harbour has been moored in five fathoms water, 1¼ cables S. 51° E. from its former position.

Panmure shoal.—The wooden can buoy off this shoal, locally known as Wheeler bar buoy, has been replaced by a spar buoy painted black,

The buoy is moored in 8 fathoms water, and bears N. 26° W., distant 12½ cables from Panmure head lighthouse.

BRITISH COLUMBIA LIGHTHOUSE DIVISION.

This division comprises all Canadian waters on the Pacific coast and the inland navigation systems of British Columbia, and is under the charge of Captain James Gaudin, agent of the department at Victoria, who also acts as inspector of lights.

There are in this province thirty two light-stations, at six of which are steam fog-alarms, and at six others bells are rung by machinery. There are three beacon lights in Victoria harbour, and one similar light in Nanaimo harbour.

The lights are in charge of thirty-four light keepers, some of whom supply assistance out of the salaries allowed.

The lights are supplied by the Dominion steamer *Quadra*, Capt. J. T. Walbran, master, and the fog-alarm machinery at the several stations was periodically inspected by the engineers of the *Quadra*.

NEW AIDS TO NAVIGATION.

North Vancouver.—A magnetic range has been established by the government of Canada on Mahon avenue, in the townsite of North Vancouver, to correct the compasses of vessels when lying in the harbour of Vancouver.

SESSIONAL PAPER No. 21

The range consists of two posts, the northern or higher post 22 feet above the ground, and the southern or lower post 38 feet above the ground, each post painted red and white in alternate horizontal bands and surmounted by a triangle painted white with a black centre line. The posts are 1,000 feet apart and bear when in line N. $5^{\circ} 37'$ E.

Portier pass.—Range light buildings were put in operation on November 15, 1902.

The front tower stands on Race point, 50 feet back from the water's edge, on bare rock, 6 feet above high water mark.

The tower is a square, wooden building, surmounted by an octagonal wooden lantern, the whole painted white. The height of the building from its base to the ventilator on the lantern is 24 feet.

The light is fixed white catoptric, elevated 23 feet above high water mark, and visible 9 miles in the line of range.

The back range tower stands on the first point southwestward from Race point, 125 feet back from the water's edge, on bare rock, 12 feet above high water mark, and bears S. 5° E. 1,200 feet from the front tower. The tower is a wooden building, square in plan, with sloping sides, surmounted by a square wooden lantern, the whole painted white. The height of the tower from its base to the ventilator on the lantern is 31 feet.

The light is fixed white dioptric, elevated 36 feet above high water mark, and is visible 11 miles from all points of approach by water.

These lighthouses were erected by day's labour under the supervision of Mr. Thomas Tubman.

CHANGES AND IMPROVEMENTS AT EXISTING STATIONS.

Brockton point.—A lighthouse with dwelling attached has been built S. 5° W. 85 feet distant from the place at which the light was previously shown. It is a wooden building, painted brown and yellow with red roof. The light is shown from a wooden lantern on the first floor in front of the building. The height of the building is 29 feet. As the building is conspicuous it was made somewhat ornate to suit its surroundings.

The light is fixed white dioptric, and shows from all points of approach, except over Burnaby shoal, which is covered by a red sector. It is elevated 42 feet above high water mark and should be visible 8 miles.

The building was erected by Messrs Baynes & Horrie, of Vancouver. Their contract price was \$1,199.

The fog-bell tower at this station has been moved, and now stands at high water mark on the north extreme of the point, N. 8° E, distant 120 feet, from the new lighthouse.

Walker rock.—The provisional stake light maintained on the beacon on this rock was replaced by a 31-day Wigham lamp, on December 11, 1900.

The light is fixed white, elevated 15 feet above high water mark, and is visible 8 miles from all points of approach. The illuminating apparatus consists of a pressed glass lens.

The light is shown from the summit of a small square wooden tower painted white, erected on the summit of the stone beacon. The tower is 7 feet high.

2-3 EDWARD VII., A. 1903

MINOR REPAIRS.

Station.	Nature of Work.	Cost.
		\$ cts.
Cape Beale.....	Repairing wood work to buildings.....	182 00
Carmanah point.....	Repairs.....	287 00
	New boat supplied.....	100 00
Race rocks.....	Repairs.....	108 00
Fisgard.....	Repairing roof.....	46 00
Victoria harbour.....	Repairing beacon lights.....	66 00
Fiddle reef.....	Repairs.....	52 00
Discovery island.....	Repairing reservoir.....	12 00
Bare point.....	Repairs.....	60 00
Saturna island.....	".....	35 00
Active pass.....	Stone reservoir.....	845 00
Entrance island.....	Repairing boathouse.....	112 00
Prospect point.....	Repairs.....	38 00
Point Atkinson.....	Repairs to station.....	457 00
Yellow island.....	Repairs to building.....	62 00
Sisters.....	Boat house annex.....	45 00
Dryad point.....	New boat supplied.....	54 00
Ivory island.....	Improving trail.....	30 00
Lawyer islands.....	Cutting down trees obstructing range.....	100 00

BUOYS AND BEACONS.

Clayoquot sound.—Three buoys have been established in Clayoquot sound, as follows :—

(a.) A steel can buoy, painted black, with T. C. (Templar channel) in white letters on it, in 24 feet water on the southeast side of the rock in Templar channel.

From the buoy the north tangent of the 30-feet islet bears N. 61° E., distant 4½ cables, and the southeast tangent of Village island, S. 20° E.

(b.) The black platform buoy heretofore marking the extreme of the spit northward of Stubbs island has been moved to the northeastward into deeper water, and is now moored in 17 feet water.

From the buoy the extreme of Stockham and Dawley's wharf on the island to the northward bears N. 9° W., distant 2 cables, and the south tangent of Meares island N. 77° W.

(c.) A black platform buoy in 21 feet water off the southwest shore of Meares island, to mark the turn from Deception channel to Village channel.

From the buoy the west tangent of Stubbs island bears S. 2° W. distant 8¾ cables, and the extreme of Stockham and Dawley's wharf, N. 69° E.

Browning passage.—The red spar buoy shown as marking the rock situated northward of the islets at the eastern end of Browning passage, is no longer maintained, the passage southward of the wooded islets, which is clear of danger, being the channel now used.

The rock found this spring at the western end of this passage, was on September 10, 1902, marked by a spar buoy.

The buoy is painted in red and black horizontal bands, and is moored in 2¾ fathoms between the two shoalest points of the rock.

Entrance point.—A steel can buoy, painted red and black in horizontal bands, has been moored in 15 feet water on Kelp reef, Stuart channel, in place of the spar buoy heretofore marking that danger.

Grappler reef.—The steel can buoy marking this reef between Admiral and Kuper islands has been changed in colour from red to black.

Sidney spit.—The wooden day beacon, which was blown down by a gale on October 27, 1900, has been re-erected in its former position. The beacon is painted white and black, the upper part white and the lower part black.

SESSIONAL PAPER No. 21

Sidney.—The two red spar buoys that formerly marked the outer edge of the shoal ground off Sidney, discontinued in 1901, have been re-established in their old positions.

The more southerly buoy is on the southeastern shoulder of the shoal, south of the settlement.

The more northerly buoy is on the northeastern shoulder of the same shoal.

Victoria rock.—The rock in Tricomali channel on which the steamer *Victoria* struck was marked by affixing white crosses to two trees on the adjacent shore of Admiral island, which in one lead over it, and by mooring on it a steel can buoy painted in red and black bands.

Portier pass.—Two pairs of day beacons have been established on the north end of Galiano island, to mark the position of Romulus rock.

The front beacon of the northern pair stands on the extremity of Virago point. It is 30 feet high, and 37 feet above high water mark.

The back beacon of this pair stands on the east shore of the bay between Virago point and Race point, and is distant 610 feet N. 27° E. from the front beacon. It is 32 feet high, and 56 feet above high water mark.

The front beacon of the more southerly pair stands on the extremity of the point next south of Virago point, and is distant from the front beacon of the northern pair 1,575 feet, S. 26° E. It is 30 feet high, and 53 feet above high water mark.

The back beacon of this pair stands 204 feet S. 85° E. from the front one. It is 45 feet high, and 69 feet above high water mark.

Romulus rock.—The black spar buoy established to mark this rock has disappeared, and, owing to the difficulty of keeping a buoy on this danger, will not be replaced.

Sturgeon bank.—The black pile beacon marking the outer edge of this bank, which disappeared in October, 1900, has been re-erected in its former position; and the can buoy temporarily marking the site, has been withdrawn.

Parthia shoal.—The day marks erected on Brockton point in 1897, to clear Parthia shoal, First narrows, entrance to Vancouver harbour, have been removed, as the new lighthouse, built to replace the pole light on Brockton point, interrupted the range; and it is considered that the spar buoy off the shoal on the south side of the narrows and the day marks on the south shore are sufficient guides to clear the shoal.

Baynes sound.—Three spar buoys painted red with movable topmarks have been moored in Baynes sound to mark the prize firing base line used by the Royal Navy.

The south easternmost buoy bears S. 65° W. $7\frac{2}{3}$ cables from the highest tree in the clump on Sandy island; the middle buoy bears S. 85° W. $10\frac{1}{2}$ cables from this tree; and the northwestern buoy bears N. 85° W. $13\frac{2}{3}$ cables from the same tree.

Walbran rock beacon.—A triangular wooden beacon, 15 feet high and 10 feet on the base, painted white, has been erected on White point, Lama passage.

The beacon in one with the extreme of Kaiete point, the southern point of entrance to Lama passage, N. 64 W., leads over Walbran rock.

Wellington rock leading mark.—White boards, nailed on a tree on the western shore of Ormidale harbour, serve as a leading mark for the rock in Seaforth channel on which the S.S. *Wellington* struck. This mark in one with the west tangent of Nevay island leads over the new danger.

Regatta rock beacon.—A cone-shaped wooden beacon surmounted by a latticework ball, the whole painted white, and showing 25 feet above high water, has been erected on the southernmost Regatta rock, Seaforth channel.

White stone beacon.—A square wooden beacon surmounted by a latticework drum, the whole painted white and showing 40 feet above high water, has been erected on White Stone, Seaforth channel.

The whole respectfully submitted.

WM. P. ANDERSON,
General Superintendent of Lighthouses.

December 11, 1902.

2-3 EDWARD VII., A. 1903

[INCLOSURE B.]

LIST of Buoys Maintained by the Department of Marine and Fisheries in Canadian Waters in 1902.

ONTARIO.

	No. of buoys.		No. of buoys.
Amherstburg, including Bois Blanc.....	44	Napanee.....	14
Bay of Quinte (three contracts).....	32	North Sister rock.....	4
Bears Rump.....	1	Niagara bell-buoy.....	1
Burlington bay.....	1	Orillia.....	9
Byng inlet.....	7	Parry sound.....	26
Collingwood.....	14	" gas buoys.....	3
Clapperton island.....	4	Pembroke.....	20
Cornwall to Prescott.....	69	Point au Baril, 15 beacons and.....	4
" " gas-buoys.....	7	Penetanguishene.....	10
Fiddler's Elbow.....	1	Point Pelee, gas buoy.....	1
Ganarhogue narrows.....	5	Port Arthur.....	1
Georgian bay.....	12	Port Rowan.....	10
Goderich.....	2	Rainy river, 11 pairs beacons and.....	14
Green shoal.....	1	Red Horse rock.....	1
Grecian shoal.....	1	River Thames.....	7
Grosse point.....	6	Rondeau.....	6
Hawkesbury.....	16	St. Joseph channel.....	4
Kaministiquia.....	19	Sault Ste. Marie.....	20
Kingston.....	19	" " canal approaches.....	25
Lake Nipissing.....	32	Seine river and Grassy lake, 30 piles and 10 beacons.....	..
Lake of the Woods, including bell-buoy.....	145	South Baymouth.....	4
Lake Simcoe.....	15	Stokes bay.....	6
Lake Superior, including bell-buoy.....	7	Surprise shoal, bell-buoy.....	1
Little Current.....	8	Tin Cap shoal.....	2
Lone rock bell-buoy.....	1	Trenton.....	11
Midland.....	7	Waubashene.....	32
Murray canal and Presqu'ile bay.....	23		

QUEBEC.

Amherst harbour.....	8	Little river west.....	1
Bersimis and Outard bay.....	3	Matane.....	4
Bonaventure.....	1	New Richmond.....	3
Cap Chat.....	1	North channel, Island of Orleans.....	10
Cape cove.....	1	Paspébiac.....	1
Carleton point.....	1	Percé.....	2
Chicoutimi.....	13	Richelieu rapids, bushes.....	..
Cock point.....	1	Richelieu river (two contracts).....	54
Echouerie rock.....	1	Rivière des Prairies.....	10
Fox river.....	1	Ste. Adelaide de Pabos.....	1
Gaspé.....	5	Ste. Anne river.....	1
Grand Entry.....	5	Ste. Placide, stakes.....	40 or 50
House harbour, Magdalen islands.....	6	St Thomas.....	8
Lachine and Lake St. Louis.....	27	St. Lawrence river between Montreal and Quebec.....	258
" " Gas buoys.....	6	Maintained by Agency, gas buoys.....	12
Lake St. Francis district.....	43	" " smaller buoys.....	50
" " gas buoys.....	12		

NOVA SCOTIA.

Advocate harbour.....	6	Chezzetcook and Petpiswick.....	6
Apple river.....	8	Christmas island and Barra strait.....	11
Arichat.....	16	Clarks cove, West bay.....	3
Argyle river and sound.....	10	Clarks harbour.....	17
Avon river.....	6	Cockerwit pass and Woods harbour.....	15
Barrington.....	39	Cooks cove, Toby cove.....	4
Bear river.....	12	Crow harbour.....	3
Beaver harbour.....	2	D'Escousse.....	8
Blandford.....	5	Digby and Annapolis.....	7
Bridgewater.....	10	Digby and Annapolis winter service.....	5
Canning or Habitant river....(6 dolphins) ..	..	Dipper harbour.....	3
Canso and St. Andrews passage.....	28	Dover.....	4
Cape Negro or North-east harbour.....	14	East bay, Bras d'Or.....	2
Cariboo.....	6	Gold river and Chester basin.....	8
Cheticamp.....	12	Great Bras d'Or.....	7

SESSIONAL PAPER No. 21

LIST of Buoys maintained by the Department of Marine and Fisheries, &c.—*Continued.*NOVA SCOTIA—*Concluded.*

	No. of buoys.		No. of buoys.
Gillis point, Boulaceet	1	Port Le Tour	12
Guysborough	3	Port Medway	9
Hay cove	8	Port Morien	2
Harbour au Bouche	(6 stakes) 4	Port Hebert	12
Ingonish, South bay	8	Pubnico	18
Isaacs harbour	11	Pegwash	9
Janvrin	4	Prospect, Lower	10
Jeddore	9	River John	3
Judique	1	Roseway	3
Ketch Harbour	6	St. Anns	3
L'Ardoise	2	St. Mary river, two contracts	26
Lahave	8	St. Peter bay	16
Lamox passage	17	St. Peters inlet	10
Little narrows	10	Sambro	11
Little Dover	9	Shag harbour	12
Little Bras d'Or	2	Sheet harbour	9
Liverpool	3	Shelburne	10
Lockeport	6	Ship harbour	9
Lunenburg	9	Ship rock	1
Lunenburg, black cove	9	Shulee	8
Lunenburg, Middle south	16	Smith island	1
Louisburg	7	Sydney	2
Mabou	12	Tangier	4
Mahone bay and Chester	20	Tatamagouche	18
Main-à-Dieu	6	Terrence bay	3
Margaree harbour	9	Tor bay	19
Martin brook	6	Three Fathom harbour	5
Merigomish	6	Tidnish	5
Marie Joseph	5	Tusket	(3 spindles) 23
Montsellier	10	Upper Prospect	4
McKinnon harbour	4	Wallace	11
Musquodoboit	7	West bay	3
Northport	12	West Dublin and Crooked channel	13
North Sydney	5	Westport	3
Parrsboro	6	Weymouth	13
Petitdegat	10	Whitehead	9
Pictou	6	Yarmouth	50
Popes harbour	3	Maintained by Agency	(whistling-buoys) 23
Port Felix	7	"	(bell-buoys) 18
Port Hood	7	"	" (conical and can-buoys) 128

NEW BRUNSWICK.

Bathurst	26	Miramichi	18
Bay Verte	36	Musquash	7
Bay du Vin	3	Neguac	19
Beaver and Blacks harbour	9	Neil harbour	1
Black brook, Miramichi river	3	Napan river, 24 stakes	2
Black Land gully	12	Northwest arm, Miramichi	6
Buctouche	16	Oak bay and Restigouche	10
Buctouche river, 200 bushes		Oromocto	7
Campobello, 1 spindle	9	Petit Rocher	1
Caraquet	21	Pisarinco	2
Cocagne, stakes, 30	11	Pokemouche	5
Dalhousie and Restigouche	10	Quaco	3
Digdequash	5	Richibucto and Albion	28
Dipper harbour	3	Richibucto, Kingston and Browns yard	30
Dorchester	3	Shediac	11
Grande anse	4	Shippigan	19
Grand lake and Salmon river	73	St. Andrews	15
Grand Manan	30	St. Croix ledge	11
Great Shemogue	7	St. John river, 179 stakes	68
Harvey	7	Tabusintac	17
Lepreau	3	Tracadie	19
Letite and Back bay, 1 spindle	21	Tynemouth creek	3
Little Shemogue	6	Washademoak, 147 stakes	2
Little Shippigan	12	West Isles, 4 spindles	23
Magaguadavic	13	Maintained by Agency, signal buoys	16
Maquapit and French lakes	24	"	" can and conical buoys 15
Marsh point	1		

LIST of Buoys maintained by the Department of Marine and Fisheries, &c.—*Concluded.*

PRINCE EDWARD ISLAND.

	No. of buoys.		No. of buoys.
Bay Fortune.....	3	Little channel..	3
Beach point	3	Montague	6
Bedeque.....	11	Murray harbour.....	33
Brae harbour. . .	5	New London.....	11
Cardigan, Lower.....	5	Orwell and Vernon river.	6
" Upper.....	11	Pinette.....	5
Cascumpeque.....	14	Port Hill.....	9
Charlottetown, 20 stakes.....	22	Pownal.....	7
Cove head.....	2	Rollo bay	3
Crapaud.....	6	Rustico	3
East river (Hillsboro').	17	Savage harbour.....	2
Egmont bay.....	10	Souris.....	4
Egmont bay, south, 8 stakes and	2	St. Peters harbour.....	8
Georgetown.....	13	Summerside	11
Goose harbour.	2	Tracadie	3
Grand river, 1 beacon.....	12	West point	1
Grand river, lot 14.....	8	Wood island.....	1
Indian rocks.....	1	Maintained by Agency, signal buoys.....	3
Malpeque.....	16	" " can and conical.....	3
Miminegash	6		

BRITISH COLUMBIA.

Alford reef.....	1 can.	Lighthouse island.....	1 conical.
Benmohr rock.....	1 cage.	Metlacatla.....	2 cage.
Burnaby reef	1 spar.	Miami reef	1 can.
Celia reef.....	1 conical.	Nanaimo harbour.....	9 cage.
Clayoquet.....	1 can.	" " 	2 spar.
" 	2 platform.	One Fathom patch.....	1 can.
Clark rock	1 conical.	Paterson rock.....	1 spar.
Colburne passage	2 cage.	Point Grey	1 can with cage.
Cortez island	1 can.	Portier pass	1 " "
Dall patch.....	1 cage.	" " 	1 spar.
Departure bay	2 " "	Reef point.....	2 conical.
Dorcas rock	1 spar.	Rosedale reef.....	1 can.
Entrance point	1 can.	Rosenfelt reef	1 conical.
Esquimalt harbour.....	2 cage.	Sand heads.....	12 " "
First narrows B. I.....	1 spar.	" " 	1 bell.
False narrows.....	2 " "	Sidney spit E.....	1 can.
False reef.....	1 can.	" " W.....	1 " "
Gossip reef.....	1 " "	" wharf	2 spar.
Governor rock.....	1 cage.	Three Fathom patch.....	1 can.
Grappler reef.....	1 can.	Tugwell point.....	1 spar.
Hodgson reef.....	1 " "	Ucluelet.....	1 " "
Horda rock	2 " "	Victoria harbour.....	2 cage.
Horsewell reef.....	1 conical.	Victoria rock.....	1 can.
Indian reef	1 can.	Village point.....	1 spar.
Johnson reef.....	1 " "	Welcome pass.	1 " "
Kelp bar.	1 spar.	Whale rock.....	1 " "
Ledge point.....	1 " "	Kootenay lake.....	11 platform.

BEACONS.

	No. of beacons.		No. of beacons.
Atkins reef.	1	Kelp reef bar.....	1
Base flat.....	1	Kelp reef.....	1
Brotchy ledge	1	Lewis rock.....	1
Canoe rock	1	Maple spit.....	1
Danger reef.....	1	Nanaimo harbour	2
Enterprise reef.....	1	North reef.....	1
False narrows.....	2	Sidney spit.....	1
First narrows, Burrard Inlet.....	3	Shark spit	1
" " " marking water		Shute reef.....	1
pipe line.....	2	Sand heads.....	l'thouse B 1
Gibson landing.....	1	Union spit	1
Grassy point.....	1	White islet.....	1
Goose spit.....	1	Walker rock	1
Gabriola reef.....	1	Zero rock.....	1

SESSIONAL PAPER No. 21

(INCLOSURE C.)

OTTAWA, November 14, 1902.

I have the honour to submit the following Report on the progress of this Survey. The principal tidal stations have been maintained in operation, and some progress has been made in the reduction of the results, as far means have permitted. The two principal tidal stations which command the two entrances to the Gulf of St. Lawrence have been put in thorough repair this season. The station at St. Paul Island in Cabot Strait, commands the main entrance by which the tides enter the Gulf from the ocean; and its advantage as a port of reference for an important part of the Gulf area, has come out in a clearer light than ever, from the comparative observations secured in 1901.

An important step in advance is being made, in the information supplied to aid navigation on the St. Lawrence route. A part of the tidal record from Father Point is being submitted to harmonic analysis, which will enable tide tables to be calculated directly for that locality. The advantage of this step has become apparent from the tidal observations of 1900 on the Lower St. Lawrence; as they showed that both tide and current in the open estuary below the Traverse, could better be referred to Father Point than to Quebec. So far, the Father Point tide tables have been calculated indirectly from Quebec, by means of the double series of variable differences described in last Report. This elaborate method was devised to save the expense of analysis at an additional station. But it has now been ascertained that the complicated relation between the two places, is chiefly due to the river influence at the upper end of the run of the tide near Quebec; while the tide in the open estuary itself is very regular. Hence the tide tables calculated from the analysis, in conjunction with the other data which have been secured, will enable the turn of the strong tidal currents of the estuary to be readily and accurately known from the tide tables.

On the Pacific coast, good progress has been made, both in the improvement of the tide tables through the analysis of further tidal record from the principal stations, and also in the establishment of additional tidal stations, to extend the information available.

In the present Report, all the information yet obtained is summarized, with regard to the tide and current in Northumberland Strait; and its relation to Cabot Strait where the Gulf of St. Lawrence opens to the ocean. The levels of datum planes, heights of extreme tides, and the effects of wind disturbance, have also been carefully and fully worked out. These are of primary importance with relation to works of construction in the harbours of the strait, as well as for uniform reference levels in any future observations.

Repeated endeavors have been made to ascertain the relation between the various datum planes in use in our cities and towns. There are often two or three of these, out of accord with each other; and further, there is usually uncertainty or actual discrepancy between the various marks by which these planes are defined. In these circumstances, the method which this Survey has adopted from the outset is to refer all the tide levels obtained, to some one satisfactory bench-mark in each port. Eventually, as the observations are continued, the value of Mean Sea Level, extreme tide levels, and other factors of importance, are determined with reference to this bench-mark. Such factors are of the highest value in city drainage works and harbour improvements. In certain rare instances, bench-marks have been established by the Admiralty, which define the low-water datum of the charts. These are always taken advantage of, where they exist. When the height of the tide is referred to this datum level, it shows the depth available in addition to the chart soundings. In the present Report, the result is given of the endeavour to correlate the various datum planes in use at Halifax; and to redetermine the low-water datum at Victoria, B.C. The relation between the tide levels and the Yarmouth town datum, is also given.

Five summer tidal stations were erected this season with the object of obtaining tidal data as a basis for the investigation of the current at the entrance to the Bay of Fundy, and in the bays on the south coast of Newfoundland.

2-3 EDWARD VII., A. 1903

A considerable amount of tabulation from the tidal record already secured, has been done during the year, and submitted to analysis as the means to do so have permitted. This will extend the basis from which the tide tables are calculated, which will be of permanent benefit in improving their accuracy in all future years. In the office work of this Survey, and in the erection of the summer tidal stations, I have had the assistance of Mr. R. Angus and Mr. S. C. Hayden.

The total expenditure on this Survey during the fiscal year from June 30, 1901, to June 30, 1902, was \$8,951.08 in which a supplementary estimate of \$1,500 is included which was expended upon material for the heavy repairs at the permanent tidal stations.

REDUCTION AND TABULATION OF TIDAL RECORD.

In order to utilize the tidal record for the calculation of tide tables by the modern method of harmonic analysis, it is necessary that it should be tabulated in hourly ordinates, which give the height of the tide at each hour throughout the year. With this object in view, it is of primary importance to secure an uninterrupted record, day and night, during the course of the year. Every endeavour in the way of foresight and vigilance, is made to ensure this. The number of hourly ordinates throughout the course of a year is 8,760; and these must be reduced to a uniform datum and freed from time errors. The tabulation of this character which has been submitted to analysis during the twelve-months since last report, is as follows:

Halifax.—Three years, from December 14, 1896, to January 15, 1900, extending the basis from which these tide tables are calculated from one to four years of recent observations. This, together with four years of old observations, obtained between 1851 and 1861, now gives a total of eight years of observations for these tide tables; and this benefits all the ports on the Atlantic coast of Nova Scotia, that depend upon them.

St. Paul Island.—Two years, from May 20, 1899, to May 31, 1901; which benefits the tide tables for the ports in Northumberland Strait, and the south-west side of the Gulf of St. Lawrence, which depend directly or indirectly on St. Paul Island.

Father Point.—Three years from January 25, 1897, to February 25, 1900. This will be of great benefit to the St. Lawrence route; as it has now been ascertained that the best results are secured by referring to this station, the tides and currents throughout the open estuary.

In addition to the above, the following tidal record from the Pacific coast has been tabulated ready for analysis; which will be made as soon as the finances of the Survey will admit of it.

Sand Heads, Strait of Georgia.—Three additional years, from November 1, 1898, to November 24, 1900; and from January 16, 1901, to January 27, 1902. This will serve to improve the accuracy of the tide tables at Vancouver and other ports throughout the Strait of Georgia, which are dependent upon this as a principal station.

PUBLICATION OF TIDE TABLES, AND IMPROVEMENTS IN THEIR ACCURACY.

The publications of this Survey during the past year, continue to be reviewed in British and foreign periodicals as in former years, which is of service in making them widely known. The requests received for tide tables, and for other information, is continually on the increase.

Tide Tables for British Columbia.—These comprise complete tide tables for Victoria, B.C., and for Sand Heads in the Strait of Georgia, a locality centrally situated in that strait, and well suited as a reference station for the ports around it. Tidal differences for Vancouver, New Westminster, Nanaimo and Baynes Sound are given with these tables; as well as the turn of the current in First Narrows, Burrard Inlet. They have met with so much appreciation that the edition printed has been increased from 500 to 800 copies, to meet the demand for them.

SESSIONAL PAPER No. 21

It is a real service to mariners that accurate tide tables are available since these were first published in 1901 : as the information for British Columbian waters given in the United States tide tables, was far from reliable. This was unavoidable in the circumstances ; the tide itself being of a different type, as explained in a former report. Regarding the accuracy of the present tables, Mr. F. N. Denison, who is continuing the tidal observations at Victoria, writes : "Your Victoria tidal predictions are almost perfect, as proved by plotting them upon the actual records, and are greatly admired and appreciated by those who have seen the comparison." The captain of the steamer *Otter*, of the Canadian Pacific Navigation Co., also writes at the end of January, 1902 : "During 1901, I often used the tables for that year, and am greatly pleased to say that I found the times of high and low water given in the tables, wonderfully correct. I see the tables for 1902 are a distinct advance on the tables for 1901, as constants are given for Nanaimo, Vancouver and Baynes Sound, ports that I frequently visit ; and I find that in the short time I have used this year's tables, they are as exact for the above ports as the tables for 1901 were for Victoria and the Sand Heads."

The tide tables have been reprinted one month at a time, by the *Times* and the *Colonist* of Victoria. The new information now issued with them, is mentioned further on in this report, where the further results now secured are explained.

Quebec, Father Point, Halifax and St. John, N.B.—In this set, the accuracy of the tide tables for Quebec has been further improved by extending the basis from which they are calculated for 1903, from four to six years of observation. This improvement is an important one, in view of the full information now issued with these, for the whole of the tidal portion of the St. Lawrence, from Three Rivers to Gaspé. The tide tables for Father Point, were published for the first time in 1902 : and those for 1903 are also deduced from the Quebec tide tables by the method described in last report. Hereafter these tables will be calculated directly from the astronomical elements determined by analysis, as already explained.

In this set of tables, tidal differences are also given for the whole of the Bay of Fundy ; and for the Atlantic coast of Nova Scotia.

These tide tables were again supplied to the leading Canadian and British almanacs, willing to publish them in whole or in part. An addition of 800 copies, reprinted from Greenwood's Almanac, was found insufficient to meet the increased demand for them : and accordingly for 1903, the quantity has been increased to 1,000. The various newspapers have also done something in the way of re-publishing these tables, or in giving the time of high water daily, much in the same way as in former years.

St. Croix Bar.—Tide tables were again computed for this locality, which has been the shallowest point in the St. Lawrence above Quebec. These tables are published in company with the tide tables for Quebec, by the Montreal Harbour Commissioners, in the publication they prepare annually for the information of the St. Lawrence pilots. The new information regarding the tides and currents of the Lower St. Lawrence was also supplied in a condensed form for this publication. The deepening of the ship channel through this bar being now completed, the next shallowest point is at St. Augustin bar, for which tidal data are also computed.

Charlottetown, Pictou and St. Paul Island.—These tide tables have the same character as last year, and they again include the whole twelve months. A distinct improvement in the accuracy of these tables was obtained from the observations taken in Northumberland Strait during the season of 1901. The tidal relations of Charlottetown to Pictou, and of Pictou to St. Paul Island, have thus been better determined ; and also the tabulation of the tidal record from St. Paul Island itself, which was submitted to analysis, is of direct benefit to this set of tables, as they are dependent upon it as a principal station.

The time of high water for Charlottetown, taken from these tables, has been published a month at a time by the *Patriot* and the *Examiner*. The tide tables for Pictou have also been published in full by the *Advocate* one month at a time, accompanied by the tidal differences for the dependent places in Northumberland strait.

2-3 EDWARD VII., A. 1903

Summerside, P.E.I., and Yarmouth, N.S.—Tide tables for Summerside were calculated for the eight months from April to November and supplied to the *Summerside Journal*, in which they were published one month at a time, with due acknowledgement to this Survey. These tables are based upon the observations which were secured at that port itself in 1901. The tide tables for Yarmouth are computed from St. John, N.B., by means of the difference in time already determined by this Survey. They are published in the *Yarmouth Times*.

Tadoussac, Cacouna and Little Métis.—Tide tables for the months of July, August, and September were again computed for these seaside resorts to meet the demand of the summer residents and tourists. These tide tables were prepared in manuscript only and posted at the leading hotels.

The tide tables for the five places last mentioned were all prepared by some extra work, without incurring expense or the cost of printing.

CABOT STRAIT.—TIDAL COMPARISONS.

Summary of Results for Cabot Strait, between Cape Breton and Newfoundland.—One of the principal tidal stations is at St. Paul Island in the middle of this strait; and the endeavour was first made to obtain comparisons with Sydney harbour and Port aux Basques on the two sides. The tide at Sydney has so unusual a character, with large secondary undulations, which are often one-third of the height of the main tide, that it was quite unsuitable for comparison with St. Paul Island. After one complete month was secured at Sydney, the gauge was removed to Neil's Harbour, a point on the Atlantic side of Cape Breton Island, as near to its northern extremity as practicable. It was distant 30 miles from St. Paul Island to the westward; while Port aux Basques, which is close to Cape Ray, at the south-west angle of Newfoundland, was distant 52 miles to the eastward. The clear width of the strait is 66 miles.

St. Paul Island is the principal station to which the tides on the south-west side of the Gulf of St. Lawrence and in the region of Northumberland strait are referred; and the immediate object of the comparative observations on the two sides of Cabot strait, was to see whether a sufficiently constant relation could be established with St. Paul Island to enable either of these localities to be used to replace it as a reference station for the regions above referred to. The extreme exposure of St. Paul Island makes the gauge unusually liable to accident; and once already it has been carried away, and twice afterwards it was partially wrecked by winter storms.

The total length of tidal record obtained in 1901 from the self-registering gauges at these three localities, was as follows:

Neil Harbour, east side of Cape Breton.....	From Aug. 9, to Oct. 31.
St. Paul Island; permanent station, Cabot Strait,.....	Continuous record.
Port aux Basques, S. W. angle of Newfoundland,.....	From July 9, to Oct. 31.

The differences in the time of the tide in relation to St. Paul Island were fully worked out for these localities. The result, after excluding a few exceptional irregularities, is given below; and it is at once evident that the variation in the difference of time is too great to enable either locality to be taken to replace St. Paul Island. It is remarkable to find so wide a variation in time on such short distances. The comparison with Pictou is also included for the same period, July 15 to October 31; and it is noteworthy that the range in the difference is little greater than for Port aux Basques. The difference with Pictou has also the advantage of being more nearly equal for high and low water, and consequently more amenable to reduction to law, by which the variation in the difference can be allowed for. The variation and the range are in absolute time throughout.

SESSIONAL PAPER No. 21

COMPARISONS WITH ST. PAUL ISLAND.—Difference in the Time of the Tide.

Localities.	Number of Differences obtained.	Variation in the Difference of Time.	Range in the Differ- ence.
Neil Harbour, H. W.....	130	0 m. to 39 m. earlier.....	M 39
" " L. W.....	116	7 " 40 "	33
Port aux Basques, H. W....	158	6 m. earlier to 38 m. later.....	44
" " L. W..	150	15 " 49 "	64
Pictou H. W.....	190	1 h. 04 m. to 2 h. 00 m. later....	56
" L. W.	184	0 h. 44 m. to 1 h. 45 m. " ...	61

Throughout the region which extends from Cabot Strait to Northumberland Strait, the leading variation in the difference of the time of the tide follows the moon's declination ; and it is greatest in amount when the declination is at its maximum. This is well illustrated by the following comparisons. The first of these shows the unusual result that the two tides of the day at Port aux Basques are alternately earlier and later than at St. Paul Island when the moon's declination is high. In the second table, a direct comparison is made at a time of high declination for each of the three localities in Cabot Strait with Pictou itself ; which is the local port of reference for Northumberland Strait.

TIDES IN CABOT STRAIT.—Comparison when the Moon's Declination is High.

Date.	TIME OF HIGH WATER.			TIME OF LOW WATER.			Moon's Declination and Phase.
	St. Paul Island.	Port aux Basques.	Difference.	St. Paul Island.	Port aux Basques.	Difference.	
1901.	H M	H M		H M	H M		
July 11....	3 41	4 00	19 m. later.	10 30	10 23	7 m. earlier	
" 11....	16 58	16 53	5 m. earlier.	22 42	23 08	26 m. later.	
" 12....	4 52	5 03	11 m. later.	11 39	11 20	19 m. earlier	
" 12....	18 00	18 02	2 "				
" 13....	5 51	6 05	14 "	0 04	0 30	26 m. later.	
" 13....	19 16	19 10	6 m. earlier.	12 42	12 25	17 m. earl er	Maximum north.
" 14....	6 52	7 05	13 m. later.	0 53	1 20	27 m. later.	
" 14....	20 22	20 07	15 m. earlier.	13 40	13 27	13 m. earlier	
" 15....	7 33	8 03	30 m. later.	1 36	2 12	36 m. later.	
" 15 ..	20 52	20 50	2 m. earlier.	14 32	14 07	25 m. earlier	New moon.

2-3 EDWARD VII., A. 1903

TIDE AT PICTOU IN RELATION TO THE THREE TIDAL STATIONS IN CABOT STRAIT.

Date.	H. W. at Port aux Basques.	H. W. at Pictou.	Difference in Time.	Alternation in Difference.	Moon, Declination.
1901.	H M	H M	H M		
August 23.....	— —	3 25	— —		
" 23.....	15 50	17 37	1 47	— 63 minutes...	Maximum south.
" 24.....	3 28	4 12	0 44	+ 81 " ..	
" 24.....	16 48	18 53	2 05	— 95 " ..	
" 25.....	4 40	5 10	0 30	+ 63 " ..	
" 25.....	17 57	19 30	1 33	— 58 " ..	
" 26.....	5 45	6 20	0 35	+ 57 " ..	
" 26.....	18 40	20 12	1 32	— 37 " ..	
" 27.....	6 40	7 35	0 55	+ 32 " ..	
" 27.....	19 28	20 55	1 27		
	St. Paul Island.	Pictou.			
August 23.....	1 45	3 25	1 40	+ 01 minutes...	Maximum south.
" 23.....	15 56	17 37	1 41	— 24 " ..	
" 24.....	2 55	4 12	1 17	+ 26 " ..	
" 24.....	17 10	18 53	1 43	— 48 " ..	
" 25.....	4 15	5 10	0 55	+ 28 " ..	
" 25.....	18 07	19 30	1 23	— 24 " ..	
" 26.....	5 21	6 20	0 59	+ 33 " ..	
" 26.....	18 40	20 12	1 32	— 08 " ..	
" 27.....	6 11	7 35	1 24	+ 10 " ..	
" 27.....	19 21	20 55	1 34		
	Neil Harbour.	Pictou.			
August 23 ..	1 47	3 25	1 38	+ 41 minutes...	Maximum south.
" 23.....	15 18	17 37	2 19	— 57 " ..	
" 24.....	2 50	4 12	1 22	+ 61 " ..	
" 24.....	16 30	18 53	2 23	— 78 " ..	
" 25..	4 05	5 10	1 05	+ 60 " ..	
" 25...	17 25	19 30	2 05	— 50 " ..	
" 26.....	5 05	6 20	1 15	+ 44 " ..	
" 26.....	18 13	20 12	1 59	— 29 " ..	
" 27.....	6 05	7 35	1 30	+ 28 " ..	
" 27...	18 57	20 55	1 58		

SESSIONAL PAPER No. 21

The last table brings out in the clearest light the pre-eminent advantage of St. Paul Island over the other localities in Cabot Strait, as a station to command the whole region under consideration. This advantage must depend largely upon its being situated in deep water; the 100-fathom line being within three miles of the eastern shore of the island, on which the tide gauge is situated. It emphasises also the importance of choosing strategic points as principal stations, whatever the exposure and the difficulties in maintenance may be, in preference to sheltered harbours where the tide itself is more irregular, owing to shallower water or greater local interference.

NORTHUMBERLAND STRAIT.—TIME OF THE TIDE.

In the season of 1896 a series of simultaneous observations in Northumberland Strait was obtained at the following localities, in the order of the progress of the tide: Souris, Pictou, Charlottetown, and Cape Tormentine. Some comparative observations were also obtained on the open Gulf coast on the north shore of Prince Edward Island and in Miramichi Bay. These observations when compared with the 'Establishments' for intermediate localities in Northumberland Strait, were sufficient to enable a table of 'Tidal Differences' to be prepared, to accompany the tide tables for this region. The remaining localities on the open Gulf coast were referred directly to St. Paul Island. The results are given, together with the general method used in the calculation of the tide tables for Northumberland Strait, in the Tidal Survey Report of December 15 1898, pages 7 to 10.

In the season of 1901 further observations at Pictou, Charlottetown and Summerside were obtained, to secure more extended data for the calculation of tide tables for these ports. This year was an appropriate one for the purpose in view, as the moon's declination has now its minimum range, whereas in 1896 the range was at its maximum. The tides throughout this region vary chiefly in accordance with the moon's declination: and diurnal inequality is thus a ruling feature of the tide. The observations at Pictou, the port of reference for this strait, extended from May 20th to November 15th without any interruption of consequence. These will enable a revised table to be prepared for the calculation of the tides at Pictou from the principal tidal station at St. Paul Island, for years when the moon's declination is low. The table in use up to the present time is given in the Tidal Survey Report for 1898, page 9. All the observations are taken in Atlantic standard time and the differences are thus in absolute time throughout.

Charlottetown.—The observations obtained here in 1896, were much interrupted by the chokage of the inlet to the gauge. At the ends of the wharfs which extend to the channel, the water is deep; but these are constantly occupied by shipping. At their sides, the water shallows at once, and there is great difficulty in securing low-water observations with a recording gauge. In 1901, the gauge was placed at Connolly's wharf, where sufficient depth was secured; but there is more exposure and much interference from the bridge operations now in progress. The object aimed at, is to obtain the difference of time with Pictou for the calculation of the Charlottetown tide tables; and the results secured in the two seasons are as follows:—

1896. Observations from June 20th to November 24th.

From 104 reliable differences, H. W. 51 m. later than at Pictou.

" 99 " " L. W. 58 m. " "

1901. Observations from June 1st to November 15th.

From 255 differences, High Water 31 m. later than at Pictou.

" 259 " " Low Water 47 m. " "

The divergence in the values is considerable; and on so long an average, it is difficult to account for. The individual differences also show a wide range in their variation. In the case of high water for which the divergence is greatest, a further distinc-

tion was accordingly made between spring and neap tides, by dividing the month into four quarters. The result is as follows ; the observations of both years being combined, and the value given for low water being the general average.

Tide at Charlottetown later than at Pictou :—

FOR HIGH WATER.—About the time of Spring-Tides, 42 m. later.

About the time of Neap-Tides, 30m. later.

FOR LOW WATER.—Throughout the month, 50m. later.

Summerside.—The tide-curves here show the effect of tidal interference to a more marked extent than at Charlottetown. The curve at low water is frequently much flattened ; or in other words, the tide stands at nearly the same level for an hour or two before rising.

A trial comparison of the difference in the time of the tide for a period of one month was made with both Pictou and St. Paul Island, the two reference stations in this region. It was thus ascertained that the variation with St. Paul Island is 40 per cent greater than with Pictou in the case of high water, and 14 per cent greater in the case of low water.

Accordingly, the difference in the time of the tide between Summerside and Pictou was worked out for the whole period of the observations, from June 12 to November 15, the average results being as follows :—

From 236 differences, time of High Water 50m. later than at Pictou.
From 231 “ time of Low Water 1h. 15m. “ “ “

The extreme variation in the individual differences of time, amounts to 42 minutes more or less than these averages ; which illustrates the large irregularity that results from tidal interference in this strait, especially towards its west end ; as the dominant tide advances along the strait from the eastern end.

The following table gives the resulting tidal differences for the strait, when revised to accord with the latest information obtained. The values for the intermediate places were found from the differences of “ Establishment ” taken in both directions from the localities at which the new observations have been secured.

TIDAL DIFFERENCES FOR NORTHUMBERLAND STRAIT, to be Applied to the Time of the Tide at Pictou, to give the Time of High and Low Water in Atlantic Standard Time (for the 60th Meridian).

Locality.	For High Water.	For Low Water.
	H. M.	H. M.
Souris	Sub. 1 17	Sub. 1 15
Port Hood.....	" 1 02	.....
Cape Bear.....	" 0 57	.....
Cape George.....	" 0 45	.....
PICTOU.....	Add 0 00	Add 0 00
Tatamagouche.....	" 0 04	.....
Pugwash.....	" 0 36	.....
Charlottetown.....	" 0 37	Add 0 50
Cape Tormentine	" 0 23	" 0 43
Baie Verte.....	" 0 27	.....
Summerside....	" 0 50	Add 1 15

Observations secured to date.—The amount of tidal record secured so far at the summer stations in these regions, is shown in the following table. At all the localities mentioned, the observations have been secured with self-registering tides gauges. The use of such gauges which give a continuous record day and night, is specially advantageous where the two tides of the day are so unequal.

SESSIONAL PAPER No. 21

These observations have furnished simultaneous comparisons with St. Paul Island and Pictou ; which afford the basis for the calculation of the tide tables published for Pictou and Charlottetown ; and also for the tidal differences above given, which are published in the tide tables.

Locality.	Year.	Period of Tidal Recrd.	No. of Tides compared.		Port of Reference.
			H. W.	L. W.	
Lower Neguac.....	1896	3 months.	102	.....	St. Paul Island.
Alberton.....	1896	11 days..	13	.....	" "
St. Peters.....	1896	29 ".....	31	.....	" "
Neils Harbour.....	1901	23 months.....	130	116	" "
Port aux Basques	1901	31 ".....	158	150	" "
Souris.....	1896	51 ".....	165	156	Pictou.
Pictou.....	1896	51 ".....	716	711	St. Paul Island.
".....	1897	31 ".....			
".....	1901	6 ".....			
Charlottetown.....	1896	3 ".....	104	99	Pictou.
".....	1901	51 ".....	255	259	"
Cape Tormentine.....	1896	11 1/2 ".....	58	67	"
Summerside.....	1901	5 ".....	236	231	"

NORTHUMBERLAND STRAIT.—TIDE LEVELS, AND LOW WATER DATUM.

Pictou, N.S.—The Bench-mark to which the levels are referred, is the surface of the stone door sill at its south end, in the door way of the Custom House building which faces the Harbour.

	Feet.
Elevation adopted for the Bench mark as above.....	100·00
Extreme High Water, which occurred during the ‘August gale,’ on August 9, 1873. The highest tide known, but not definitely recorded.	
Exceptional High Water; a night tide in December, 1889, as marked by the Harbour Master at the time. It occurred during a gale from the north and north-west	90·86
Exceptional High Water of December 5, 1900; as marked at the time by Mr. Peter Fraser.....	89·72
Highest tide recorded by the tide-gauge during the season of 1896, from June 3, to November 27. Occurred during a storm on November 6.....	88·35
Highest tide recorded by the gauge during the season of 1897, from June 21 to November 30. Occurred during a storm on November 27.....	88·40
Several tides in these seasons reached elevation.....	87·65
Highest tide recorded by the gauge during the season of 1901, from May 20 to November 15. Occurred on October 1.....	87·85
(A storm tide on November 10, was 0·05 foot higher.)	
LOW WATER DATUM, based upon the average elevation of the lower of the two Low Waters in the day, at spring tides, during the three seasons of 1896, 1897 and 1901	81·40
(This should be the same as the low water datum of the Charts, as nearly as can be ascertained by the observations of these three seasons.)	
Lowest Low Waters recorded by the gauge in each of the three seasons, between the dates already given :—	
Season of 1896, on June 26.....	80·25
Season of 1897, on November 27.....	80·15
Season of 1901, on May 20.....	80·02
Zero of the scale of the tide gauge in 1896.....	80·16
" " " in 1901, set six inches lower than in 1896	79·66

2-3 EDWARD VII., A. 1903

Charlottetown.—There is no City datum ; although an approximate level for Low Water was obtained from a short series of tidal observations when the drainage system was put in ; and more recently, the tide levels established by this Survey in 1896 have been made use of. There is no Bench-mark to record and fix the Low-water datum of the charts. The Bench-marks established by this Survey have enabled a uniform datum to be used for the tidal observations of 1896 and 1901. By the instrumental levels taken last season, all the information extant with regard to extreme high and low tides, has been referred to these Bench-marks, which thus serve to fix permanently all the important tide levels ; and the datum adopted in 1901 for the Hillsborough bridge now under construction, has also been connected with them. They are as follows :—

Original Bench-mark of 1896. On Peake's building at the south-west corner of Queen and Water streets. The northern end of the sandstone window sill, next to the corner, on the front of the building facing on Queen street. Elevation, 100·00.

New Bench-mark, 1901. On a brick block at the south-west corner of Queen and King streets. The top of the sand-stone plinth at the corner, on the side facing King street ; the level being the same as the joint between the sandstone foundation and the brickwork on the King street side of the block. Marked by an inverted broad arrow on the stone above the plinth, and the letters B. M. Elevation, 103·18.

(The elevation of this Bench-mark above the Hillsborough bridge datum is 108·49.)

	Feet.
Exceptional High Waters during gales ; being night tides on October 11-12 and on December 5, 1900, the latter being the higher of the two. Average level of three points marked at the time by the Harbour Master and by Mr. G. Handrahan.....	95·30
Top of cap of wharf beside the tide gauge, at the south-west corner of Connolly's wharf	94·09
Highest High Water recorded by the gauge in the season of 1896. Occurred November 6 ; level raised by a storm.....	93·90
Highest High Water recorded by the gauge during the season of 1901, from May 30 to November 15. Occured on October 1.....	93·95
LOW WATER DATUM, based upon the average elevation of the lower of the two low waters in the day, at spring tides, during the two seasons of 1896 and 1901.....	84·80
Lowest Low Water recorded by the gauge in the season of 1896 ; a number of those in the early part of the season being lost on account of chokage when the tide was low. Occurred October 9.....	84·35
Lowest Low Water recorded by the gauge during the season of 1901, between the dates already given. Occurred October 29.....	84·00
Exceptional Low Water, as observed by the Engineers of the Hillsborough bridge ; 1901 May 20....	83·03
Zero of the scale of the gauge in 1896.....	81·80
" " " in 1901, set one foot higher than in 1896.	82·80
Level of the inlet of the tide column in 1901.....	78·03

Summerside, P.E.I.—A Bench-mark has lately been established here by Commander Tooker, R.N., to define a Low-water datum for the recent surveys made under his direction. As it is only attached to a pile wharf, however, it was deemed advisable to carry instrumental levels to one of the few masonry buildings in the town, for greater permanence.

The point chosen as a Bench-mark was at the north-east corner of Holman's block ; the joint between the stone foundation and the brick-work, at the top of the course which forms the door-step level all along the street front of the building.

	Feet.
Elevation adopted for the Bench-mark as above.....	100·00
Exceptional High Water. Night tide on October 11, 1900. Six points marked * at different places in the harbour as the level reached by the water, were found to range in elevation from 90·07 to 90·31. Mean value.....	90·21
Highest High Water recorded by the gauge during the season of 1901, from July 12 to November 15. Level raised by a storm on November 14.....	87·60

SESSIONAL PAPER No. 21

Highest High Water undisturbed by storms. Occurred on June 17.....	87·30
Bench-mark established by Commander Tooker. A broad arrow of sheet copper, placed on a pile on the east side of the Government wharf, nearly abreast of the lighthouse.....	87·30
Admiralty Low Water datum, defined as 7·60 feet below this Bench-mark	79·70
Lowest Low Water recorded by the gauge during the season of 1901, between the above dates. Occurred on October 30.....	80·10
Zero of the scale of the tide-gauge.....	79·30

Sydney, C.B.—The city datum was utilized for the tidal observations. To do this, it was necessary to carry the city levels half a mile further to the site of the gauge, which was placed at the Intercolonial Railway wharf at Battery Point. A Bench-mark was cut on the court house, on the corner of Charlotte and Desbarres streets, which is the nearest masonry building to the sight of the gauge. It is cut on the stonework on the south side of the basement doorway, under the main entrance; on the west side of the building.

	Feet.
New Bench-mark cut on the court house, as above described. Elevation above the Sydney city datum.....	57·20
Cap of the wharf at the tide-gauge, Battery Point	10·43
Highest High Water recorded by the gauge during the observations from July 4 to August 6, 1901; occurred on July 17.....	5·35
Lowest Low Water recorded, in the same period; occurred on July 16.....	0·10
The Sydney city datum. (Intended for Low Water)....	0·00
Zero of the scale of the tide-gauge; below datum	-1·51

Port aux Basques, Newfoundland.—The point made use of as a Bench-mark, is the top of an iron eye-bolt let into the rock, six feet west of the north-west corner of E. Pike's fish store: at the head of the Government wharf.

	Feet.
Bench-mark as above; elevation adopted.....	100·00
Highest High Water recorded during the season of 1901, from July 9 to November 1.....	93·95
Low Water datum; based upon the average elevation of low water at spring tides, as observed during the season.....	88·60
Lowest Low Water recorded during the season of 1901; occurred October 29....	88·25
Zero of the scale of the gauge.....	86·13

Comparison of Spring Tides in Northumberland Strait.—In the season of 1901, the moon's perigee nearly coincided with the new moon in May and June; and in June the maximum declination also occurred at new moon. In this region the moon's declination is the ruling astronomical factor; as it gives rise to the diurnal inequality which is here so pronounced. In consequence, one of the two tides in the day had an unusual range in June. Conditions favourable to extreme tides did not recur till the autumn, the perigee falling near the full moon in October and November, with high declination. At St. Paul Island the diurnal inequality is less pronounced; and in consequence the spring tides are more nearly equal throughout the season. But only those at the corresponding dates are given for comparison with the tides in Northumberland strait.

The elevations given for comparison are not referred to the same datum throughout; there being as yet no continuous datum established in Canada. Each set of levels is therefore referred to its own local datum.

St. Paul Island, N. S.				Pictou, N.S.			
Date.	High Water.	Date.	Low Water.	Date.	High Water.	Date.	Low Water.
Sat. June 15....	6.30	Mon. May 20....	2.15	Sat. June 15....	87.50	Mon. May 20....	80.02
Mon. June 17....	6.45	Tue. June 18...	2.50	Mon. " 17....	...	Tue. June 18....	81.20
Wed. July 17....	6.65	Sat. July 13...	2.80	Wed. July 17...	87.40	Sat. July 13....	81.25
Mon. Sept. 30* ..	7.10	Tue. " 16....	3.00	Tue. Oct. 1....	87.85	Sun. Sept. 29 ...	81.40
Fri. Oct. 25....	6.75	Sun. Sept. 29 ...	3.05	Mon. Oct. 28...	87.25	Tue. Oct. 29....	80.60
Mon. Oct. 28....	6.50	Tue. Oct. 1....	3.05	Sun. Nov. 10*...	87.90	Wed. Oct. 30... .	80.65
Sun. Nov. 10..	6.55	Tue. Oct. 29....	2.60	.....	.....	.....	.....

Charlottetown, P.E.I.				Summerside, P.E.I.			
Date.	High Water.	Date.	Low Water.	Date.	High Water.	Date.	Low Water.
.....	.....	Mon. May 20....	83.03	Sat. June 15....	87.25	.....	.....
Mon. June 17...	93.80	Tue. June 18....	84.45	Mon. " 17....	87.30	Tue. June 18....	80.50
Wed. July 17....	93.55	Wed. July 17....	84.90	Wed. July 17....	87.20	Sat. July 13... .	80.40
Tue. Oct. 1. ...	93.95	Wed. Oct. 2....	84.75	Thur. Oct. 3....	87.20	Wed. Oct. 30....	80.10
Mon. Oct. 28....	93.75	Tue. Oct. 29....	84.00	Thur. Nov. 14*...	87.60	.....	.....

* Tides marked thus, are raised above their true level by storms.

Effect of the Wind on the Height of the Tide in Northumberland Strait.—As a rule, the tide is highest with north-east wind, and lowest with south-west wind. This is in accordance with the general course of the tidal undulation in its progress along the north-west side of Cape Breton island, in approaching the eastern end of the strait ; as these winds are in its favour or contrary to its direction.

Weather Conditions at the time of the Exceptional High Waters in Northumberland Strait, above given.—At Pictou, Charlottetown and Summerside, meteorological observations are taken regularly at 9, 14 and 21 o'clock. The wind record is thus for the day time only ; and the barometer readings may not give the actual maxima and minima which occur.

The exceptional high water on the night of October 11-12, 1900, is the highest on record at Charlottetown and Summerside, P.E.I. At Charlottetown there was a gale before and after ; but it calmed down at about midnight and the tide rose suddenly, flooding the wharves. At Summerside the conditions were precisely similar. The weather conditions on the two sides of the strait at the time were as follows :—

At Pictou ; barometer on October 9 at 14 o'clock Standard time, 30.15 ; falling steadily till the 11th at 21 o'clock when it reached its lowest, 29.15.

October	9	Wind	north-east all day.	Force	III to IV, Beaufort scale.
"	10	"	north-east to east.	"	IV to III, " "
"	11	"	east to north-east	"	IV to VIII, " "
"	12	"	south-west & north-west	"	IV to III, " "

SESSIONAL PAPER No. 21

At Charlottetown, the barometer fell steadily from 30·270 on October 9 at 21 o'clock ; the lowest observed being 28·893 on the 11th at 21 o'clock, Standard time. On the 11th there was a violent rain storm from 18 to 20:30 o'clock.

- October 9. Wind north-east and east all day. Rainy.
 " 10. Wind east, falling to calm. Raining.
 " 11. Wind south-east, east, and south-west. Rain heavy at times.
 " 12. Wind north-east or calm. Weather clearing.

At Summerside, the weather observations were as follows :—

- October 9. Wind north-east, with rain ; all day.
 " 10. Wind " " "
 " 11. Wind east and north-east all day. Rainy.
 " 12. Wind north, changing to north-west in the afternoon.

At the time of the exceptional high water on December 5, 1900, the wind was also north-east, amounting to a moderate gale. At Pictou the barometer reached its lowest, 29·23, on the 5th at 14 o'clock. The wind record was as follows :—

- December 4. Wind west to north-west. Force II to VI, Beaufort scale.
 " 5. " north-east all day. " VII to VI, "
 " 6. " north-west all day. " III to I, "

CURRENT IN NORTHUMBERLAND STRAIT.

Observations of the turn of the current were taken in 1901 on the north side of Pictou island, from June 20 till September 15 ; a total of 164 observations being secured. These were compared with the simultaneous tidal records at Pictou, which has proved the best port of reference for Northumberland strait ; and with the tide at St. Paul island, the principal tidal station for this region.

In these comparisons between the time of the turn of the current in the strait and the time of the tide, it was found that the variation in the difference of time was somewhat greater with Pictou than with St. Paul island. It will therefore be better eventually to refer the current directly to the tide at St. Paul island ; as the tide tables for Pictou are deduced from that station, and the ultimate reference is to St. Paul island in either case. This will be the best mode of procedure when sufficiently extended observations have been secured to enable a current table to be computed for this strait ; but for our present purpose, to indicate the laws which govern the current, we may make the reference to Pictou, the nearer station.

The variation in the difference of time between the turn of the current and the tide is large ; as the turn may take place as much as two hours before high water or after low water. The greater part of the variation follows the change in the moon's declination ; as this has been found from the first to be the ruling element in this region. This is very confusing to the mariner, as the turn of the current in relation to the tide is out of accord with the moon's phases, and has thus no fixed relation to the spring and neap tides. The greatest apparent irregularity is when the moon's declination is at its maximum ; and this occurs sometimes at the spring tides and sometimes at the neaps. The ordinary navigator takes refuge in the conclusion that the currents are chiefly influenced by the wind.

In the case of a tide which is ruled by declination, the chief variation is of the nature of a diurnal inequality. To arrive at correct conclusions, it is therefore important to have observations both day and night. The shore observations which were the only ones that could be taken in the circumstances, could only be obtained in the day time ; but to make up for this, a careful analysis of the results was made, on which we will endeavour to base, as concisely as possible, a statement of the laws governing the current in this strait. These laws are well established by the observations ; but the amounts of the time-intervals between current and tide are subject to revision, as the length of these observations was not sufficient to eliminate irregularities due to weather conditions.

RELATIONS BETWEEN THE TURN OF THE CURRENT IN NORTHUMBERLAND STRAIT, AND THE TIME OF HIGH AND LOW WATER.

(1.) The time-interval between the turn of the current and the time of the tide, is found to vary with the moon's declination ; and the leading variations in this time-interval may be classified as follows :—

For the turn of the current when the tide is high : After an upper transit of the moon at its maximum north declination, or after a lower transit at maximum south declination, the turn occurs at 1^h 44^m *before* high water at Pictou. For the turn of the current when the tide is low : After a lower transit at maximum north declination or an upper transit at maximum south declination, the current turns at 1^h 52^m *after* low water at Pictou.

For the turn of the current at a time of maximum declination which comes after the opposite transits of the moon to those above indicated, the interval is as follows :—

For the turn when the tide is high, 14^m *before* H. W. at Pictou.
" " " " " low 18^m *before* L. W. at Pictou.

Hence for consecutive tides, there is an alternation in the time-interval, which is of the same character as the diurnal inequality in the tide itself. From the amounts above given, this alternation in the time-interval between the turn of the current and the time of the tide, has the following maximum values :—

At consecutive high waters, 1^h 30^m. At consecutive low waters, 2^h 10^m.

(2.) When the moon is near the equator, the turn of the current on the average, is nearly simultaneous with high and low water at Pictou. This average includes both the spring and neap tides.

(3.) Again, when the spring tides only are considered, and an average is taken which is long enough to eliminate the variation due to declination, the turn of the current is within 20 minutes of the time of high or low water at Pictou. The variation with the moon's phases thus appears to be small in comparison with the declination variation, and such irregularities in the turn of the current as may be due to wind disturbance.

The results, at the time of the moon's maximum declination, may be put in a tabular form as shown below. The low tide is the first to occur after the moon's transit.

MOON AT MAXIMUM DECLINATION NORTH.			
After Moon's Upper Transit.		After Moon's Lower Transit.	
Tide Low :	Tide High :	Tide Low :	Tide High :
18m. before L. W.	1h. 44m. before H. W.	1h. 52m. after L. W.	14m. before H. W.

MOON AT MAXIMUM DECLINATION SOUTH.			
After Moon's Upper Transit.		After Moon's Lower Transit.	
Tide Low :	Tide High :	Tide Low :	Tide High :
1h. 52m. after L. W.	14m. before H. W.	18m. before L. W.	1h. 44m. before H. W.

Further observations this year.—The observations of the current in Northumberland strait this year, were taken at its narrowest part, between Cape Tormentine and Cape

SESSIONAL PAPER No. 21

Traverse. They were obtained last winter and again in the summer season, as described further on in this report. These observations have not yet been worked out fully; but the turn of the current here also, can best be referred to St. Paul Island.

PACIFIC COAST TIDES.—SUMMARY OF RESULTS TO DATE.

The new information which has now been reduced to practical shape may be summarized as follows:—

(1.) A comparison between the tide at Victoria and Esquimalt during six months in 1900, from simultaneous records obtained at the two places. (2.) A similar comparison between New Westminster and Sand Heads during four months at the four quarters of the year. (3.) Six months simultaneous comparison of the tide at Vancouver and Sand Heads in 1901, by which the time and the range of the tide at Vancouver becomes known from the tide tables for Sand Heads. (4.) Six months observations at Baynes Sound near the north-east end of the Strait of Georgia, compared with the simultaneous record at Sand Heads. (5.) An endeavour to recover the original datum at Victoria, or the low water level to which the soundings are referred on the chart of that harbour. (6.) The turn of the current in First Narrows, Burrard inlet, from six months observations taken in 1901 and compared with simultaneous tidal record. (7.) The current in Seymour narrows from observations taken by the U. S. Coast Survey in 1897, compared with the tide at Sand Heads.

All the tidal observations above indicated, were obtained by means of self-registering tide gauges. It may be noted that on the Pacific coast, there is not only a large diurnal inequality but also an annual variation. Hence to make satisfactory comparisons, it is necessary either to have six months of continuous observation at the two localities, or to take four months at the four quarters of the year. The stations for which tide tables are calculated are Victoria, in Fuca strait, and Sand Heads in the Strait of Georgia; and these are better situated for purposes of comparison and give much better results, than can be obtained from comparisons with the United States tidal station at Port Townsend, on which the information for British Columbia given in their tide tables, is based. The reason for this is the different character or type of the tide at these tidal stations, as already explained in the Report of December, 1900, page 7.

The results of the above observations and investigations have now been embodied in the annual tide tables for British Columbia, which were first published for the year 1901. All the results are in Pacific Standard time, and the differences are thus in absolute time.

Esquimalt.—Although this port is only 4 miles distant from Victoria, there is a considerable variation in the time of the tide between the two places. The observations extend over six months from May to October in 1900, and the resulting averages are given below. It will be noted also that the time of the tide is in reality later at Esquimalt than at Victoria, while in the United States tide tables both high and low water were given as earlier up to 1900: and the time of low water is still given as earlier.

From 223 differences, H. W. at Esquimalt is 14m. later than at Victoria.

“ 246 “ L. W. “ 17m. “ “

New Westminster.—A comparison with Sand Heads has been made during four months at the four quarters of the year; namely, December, 1899, and March, June and September, 1900. The time of high water at New Westminster is 40 minutes later than at Sand Heads, on the average. During the freshets in the early summer, when the water in the river is high, the time of high water is about half an hour later still.

The variation in the time of low water is very great. A general average value, based upon the lower low waters, shows that low water usually occurs at New Westminster 2 h. 30 m. after low water at Sand Heads. The higher low waters occur only half an hour to one and a-half hours after low water at Sand Heads. This uncertainty is of less importance, however, as these low waters are little felt at New Westminster.

2-3 EDWARD VII., A. 1903

Baynes Sound.—The observations were taken at the Union wharf by the officers of H.M.S. *Egeria*, and they kindly handed over the original records to the Resident Engineer of Public Works at New Westminster, from whom they were obtained for this Survey. This record extends in all from May, 1898, to June, 1899, and from November, 1899, to June, 1900. Parts of this record were complicated by troublesome time errors or were too much broken by interruptions to be serviceable. A continuous period of six months was selected as the most reliable for comparison with the simultaneous record at Sand Heads. This period extended from December 1, 1898, to May 31, 1899, with an interruption in January, which was supplied from a corresponding period in the following year. This afforded a time comparison between 325 corresponding tides at the two places.

The result is important, as it affords definite information as to the run of the tide throughout the length of the Strait of Georgia almost as far north as the southern tide runs, before meeting the contrary tide from the other direction. The difference in the time of the tide is very little; which may be accounted for by the great depth of the water, about 100 fathoms continuously, which accelerates the tidal undulation. There is also an evident variation with the season of the year, which shows the need of taking a period of a half-year to obtain a correct general average.

TIME OF TIDE IN BAYNES SOUND, COMPARED WITH SAND HEADS. (Monthly averages.)

	Dec.	Jan.	Feb.	Mar.	Apr.	May.
	mins.	mins.	mins.	mins.	mins.	mins.
Difference for H. W.	-3	-1	0	+6	+8	+13
Difference for L. W.	-2	-2	-1	0	0	+ 6

General average.—H. W. in Baynes Sound, 5 m. later than at Sand Heads.
L. W. “ 0 m. (simultaneous with Sand Heads.)

Time of the Tide at Vancouver.—The comparisons between corresponding tides at Vancouver and Sand Heads have now been extended to a period of nearly six months from observations secured in 1901; and the result was worked out promptly for publication this year in the tide tables. The actual periods of the simultaneous comparisons are, June 14 to August 14, and October 12 to December 31. The difference in the time of the tide when reduced to monthly averages, is as follows :—

TIME OF TIDE AT VANCOUVER, COMPARED WITH SAND HEADS. (Monthly averages.)

	July.	Aug.	Oct.	Nov.	Dec.
	mins.	mins.	mins.	mins.	mins.
Difference for H. W.	31	33	26	24	27
Difference for L. W.	28	32	22	31	27

General average.—H. W. at Vancouver, 28 m. later than at Sand Heads.
L. W. “ 29 m. “ “

Range of the Tide at Vancouver.—To find the relation of the ranges at Vancouver and Sand Heads, a comparison was made for two months, June 14 to August 14, 1901.

SESSIONAL PAPER No. 21

It was found that the range at Vancouver was greater in proportion when the range itself was less, and vice versa. The point of equality corresponds to a range of $8\frac{1}{2}$ feet at Sand Heads. The rule given below is based upon average values.

To find the range of the tide at Vancouver, from the range at Sand Heads which is shown in the tide tables :—

- (1.) When the range at Sand Heads is large (more than $8\frac{1}{2}$ feet), deduct 5 per cent.
- (2.) When the range at Sand Heads is small (less than $8\frac{1}{2}$ feet), add 5 per cent.

Current in First Narrows, Burrard Inlet.—Observations at the Narrows were obtained during six months from April to September, in 1901 ; and instead of comparing these with Vancouver, a direct comparison was made with the tide as observed simultaneously at Sand Heads. In this way a difference is obtained by which the time of slack water in the Narrows may be found at once from the tide tables published for Sand Heads. There is remarkably little variation in the monthly averages, considering that the time of slack water is necessarily much less definite than the time of high water. The chief irregularity in the difference, is in the case of the small tides of little range when the movement of the current is slow, and the true moment of slack water is itself uncertain. The average of 181 observations at high water and 205 at low water gives the following result :—

Slack at High Water occurs 54m. after H. W. at Sand Heads.

Slack at Low Water occurs 50m. after L.W. at Sand Heads.

Current in Seymour Narrows.—The observations obtained by the U. S. Coast Survey in 1897, were compared with the simultaneous observations of the tide at Sand Heads, in the hope of establishing a reasonably constant difference in time between them. The variation in time proved to be very wide, however, amounting occasionally to one and half hours, earlier or later than the average value. Also, this variation appears chiefly to follow the change in the moon's declination, which throws it out of accord with the spring and neap tides. The most marked feature when the tide is governed by declination, is the diurnal inequality ; and as these observations were taken in the day time only, they were not sufficiently continuous or extended to establish a law by which this large variation could be taken into account.

Victoria. Datum plane of reference.—It is highly desirable in tidal observations, that the height of the tide should be referred to the original Low-water datum used for the soundings on the chart. When this is the case, the navigator has only to add the height of the tide to the soundings, to know the available depth of water. The primary importance of establishing a Bench-mark to indicate the Low-water datum of the soundings is rarely recognized, however.

The records of such a Bench-mark at Victoria, were lost in the fire at New Westminster, when the Public Works office was destroyed. It is always a matter of great difficulty to re-establish the low-water datum when it is lost ; and it is quite evident that all questions of depth, alteration of shoals, grounding of vessels, &c., depend upon the true elevation of the plane of reference for the soundings being known and fixed permanently by reference to a Bench-mark.

Last season, Captain Walbran, of the D. G. S. *Quadra*, endeavoured to pick up the plane of reference at Victoria, from soundings on the shallows bordering the channel, taken during calm weather.

In this he was assisted by Mr. F. N. Denison, who recorded the height of the tide simultaneously. In the tide tables, the height of the tide is referred to the plane of reference used during the period of the observations themselves. A harmonic analysis has now been made from the two years of observation ; and the levels resulting make it possible to draw some conclusion as to the level of the water known as "Low water ordinary spring tides," to which soundings are usually referred. The large diurnal inequality makes this less definite however, than in regions where the tides are more regular. The levels referred to the plane of reference of the tidal observations are as follows :—

2-3 EDWARD VII., A. 1903

	Feet.
Mean Sea Level. From two year's observation, from April 1895 to April 1897...	5.75
Harmonic Tide Plane; at a distance below Mean Sea Level given by the sum of the harmonic constants $M_2 + S_2 + K_1 + O$	0.89
Lower Low Water; including in addition to the above, the remaining harmonic constants which represent the diurnal inequality.....	0.06

The last elevation given, corresponds closely with the datum of the tide tables. The only elements in the tide which carry it below this level, are the influence of the moon's perigee when it coincides with the above extremes, and the annual variation in the tide.

This shows that the datum plane of the tide tables is as low as it can be put with any reason, and the probability seems to be that this is fully as low as the low-water datum of the chart soundings. This is also corroborated by the results deducible from the special soundings above referred to. It is the practice of the Admiralty also, where there is a pronounced diurnal inequality, to take the lower low water as the reference level. It therefore appears probable that the plane of reference for the height of the tide as used in the tide tables, corresponds with the original low-water datum of the charts, as nearly as can now be ascertained.

Further observations.—The observations at Vancouver, B.C., were resumed on March 1, to secure better tidal data for that port. Also, on the occasion of the visit of the Chief Engineer to that coast in July, he made arrangement with the officers of the Meteorological Service for the erection of two gauges to obtain records of the tide of the open Pacific. One of these was placed at Bamfield creek, in Barkley Sound, on the west side of Vancouver Island; at a sufficient distance from the entrance to Fuca Strait to be out of the influence of its currents. The other gauge was placed at Port Simpson, B.C., which is open to the Pacific in both directions through Hecate Strait and Dixon Entrance. The recording instruments used at these stations are of the Richard type; a scale adapted to the range of the tide being obtained by a suitable alteration in the wheel-work.

The principal tidal station in the Strait of Georgia, situated at Sand Heads, has failed to record low water since June; on account of an alteration in the sand bars which now bank in the water at low tide. The neighboring tidal station at Garry Point will meantime be utilized by means of a double reference, in making comparisons with other harbours in the strait. Mr. G. A. Keefer, Resident Engineer of the Public Works department, will have the gauge at Sand Heads moved further out, where the water will have unimpeded access to it. Previous to the time of the above interruption, the length of tidal record which has been submitted to harmonic analysis, or tabulated in readiness for this analysis, amounts in all to five complete years.

THE PRINCIPAL TIDAL STATIONS.

The seven principal tidal stations in Eastern Canada have been maintained in operation throughout the year. At Quebec, Father Point, Belle Isle strait, and St. John, N.B., the tidal record secured has been continuous. At two of the stations only, serious interruption occurred. At Halifax there was a loss of several months on account of change of observers, before a satisfactory arrangement could be made. Also, at St. Paul island the trouble continued from the threatened choking of the inlet to the tide pipes, referred to in the last report; and finally in an exceptionally severe gale on November 25, 1901, the tide gauge was partially wrecked; the crib-work being carried away, and the iron cylinder displaced. It was braced up temporarily, however, and further record was secured until January 20 following, when the gauge ceased to work. At Yarmouth, N.S., the loss of record last winter extended from January 30 till February 26. There is a similar loss there each year, as this gauge is not heated.

The tidal observations secured last year at Sydney, Neil's Harbour and Port aux Basques, on the two sides of Cabot strait, showed that St. Paul island itself was much the most satisfactory station from which to deduce the tides in Northumberland strait

SESSIONAL PAPER No. 21

and the south-west side of the Gulf of St. Lawrence. On this account it was deemed advisable to make sufficient expenditure upon it, to put it in thorough condition for the future. The crib-work was rebuilt of hardwood and the irregular angles between it and the rock were filled with cement to hold it in position. The iron cylinder was partially renewed. The difficulty with the chokage of the tide pipes had been largely due to material falling from the cliff above; a friable micaceous rock which is ground up rapidly into sand. The trouble was ultimately overcome by carrying the inlet of the tide pipes in the opposite direction, by brass piping, into a narrow gully which is always kept clean by the scour of the waves. Careful instructions were drawn up, and all the necessary fittings were designed or procured for these repairs; which were carried out during July by Captain Douglas, R. N. R., with the co-operation of Mr. S. C. Campbell, the superintendent of the island. The diploidoscope which furnishes correct time, was carefully adjusted to the meridian: and the plane of reference for the height of the tide was re-established by instrumental levels from the Bench marks already placed for the purpose. The work was inspected by myself at the beginning of August, when the final adjustments were made.

At Forteau bay in Belle Isle strait the tide gauge required considerable improvement. A sheathing of hardwood, four inches thick, was placed on the two most exposed sides of the crib-work and secured by heavy angle-irons at the corners. The iron cylinder had settled over to an inclination of one in twelve from the vertical; and in straightening it up, it was necessary to alter the positions of both gauges inside the tide house, and to refit the sight-gauge. Every thing was put in thorough repair and the various instruments were also adjusted, as at St. Paul island.

Types of Sight Gauge.—In the sight-gauge at Forteau bay, wooden rods are used for the connection between the graduated staff and the float. These rods are an inch in diameter, and are made of basswood for lightness. Their length is seven feet, and they are varnished to prevent them from absorbing moisture, as this would increase their weight and depress the float. The total length of the sight-gauge was carefully set at 16.00 feet in September, 1900; and in August, 1902, its length was found by accurate measurement to be 15.99 which proves this type of sight-gauge to be perfectly reliable. It is the most satisfactory arrangement when the distance between the staff and float is not too great to preclude its use. Where this distance is greater, as at St. Paul island, where it amounts to twenty-four feet, nickel wire made into long links has proved to be the most satisfactory connection. These results are mentioned because of the great difficulty in finding any material for this connection, which would withstand sea-water and maintain its length unaffected by the heating lamps in winter.

FIELD WORK IN THE SEASON OF 1902.

In arranging the work of the season the first consideration had to be given to the principal stations; as St. Paul island was partially wrecked and required reconstruction; the gauge in Belle Isle strait was not in a satisfactory condition; and there were difficulties at Halifax and St. John which demanded attention. Careful preparation was needed for this work, especially for the isolated places; as most of the fittings and iron-work had to be specially made. Also, with a view to the reconstruction of the tide-gauge at Father Point when the new wharf there is completed, two lengths of old boiler were secured for the tide column and stored there in readiness.

The gauges at St. John and Halifax were visited in May, and the difficulties adjusted or noted for further investigation. From June 20 to July 23 the four summer tidal stations at the southern end of Nova Scotia, between Shelburne and Yarmouth, were erected and the observations commenced. My assistant Mr. S. C. Hayden, was then left in charge of these, with headquarters at Clarke harbour; and in August and September the tidal stations at St. Paul island, Trepassey bay at the eastern end of Newfoundland, and in Belle Isle strait, were visited and put in order as explained above; and on the way, the instrumental levels required were taken at Yarmouth, Digby and Halifax. Clarke harbour was again reached on September 27 after making a round of 2,750 miles. Notes and sketches were made of the wharfs in the harbours around the Newfoundland coast, which will be of value for future reference.

2-3 EDWARD VII., A. 1903

SECONDARY TIDAL STATIONS IN SOUTHERN NOVA SCOTIA.

The object of the stations established this year on the Nova Scotia coast was to secure a better connection between the Atlantic tides and the Bay of Fundy. On a length of 60 miles of coast at the southern end of Nova Scotia, the tide increases from its oceanic range of 7 feet at Shelburne or Negro harbour, to 16 feet at Yarmouth at the entrance to the Bay of Fundy. It has already been ascertained by the observations of 1898, that the tides from Yarmouth upward throughout this bay, can best be referred to St. John, N.B.; and a further object of the present observations was to ascertain the dividing line between places referable to the principal tidal stations in the two directions, St. John, N.B., and Halifax. The tidal undulation in the North Atlantic strikes squarely upon the Atlantic coast of Nova Scotia, there being little difference in the time of its arrival at any of the harbours between Cape Sable and Scatarie, except where delayed locally in running up deep bays. The height of the tide also, is nearly the same throughout this distance, and this whole coast can therefore be correctly referred to Halifax.

The points selected after careful consideration were Shelburne, Clarke harbour, Barrington passage and Pubnico bay. Shelburne is sufficiently far to the eastward of Cape Sable to be beyond the reach of any influence of the Bay of Fundy and thus to give the unaffected Atlantic tide. The observations there will also furnish a check on the time at the intermediate ports from there to Halifax. Clarke harbour is practically the same as Cape Sable and the nearest point to that cape at which shelter can be secured. It thus gives the tide at the extreme outlying angle at the southern end of Nova Scotia. At Pubnico bay, which is only 18 miles north-westward, the tide already has the same characteristics as in the Bay of Fundy. Lastly, Barrington passage was selected to afford an intermediate point in the progress of the tide, at about the middle of the time-interval between Shelburne and Clarke harbour.

Another tide gauge was placed at Trepassey Bay, within 16 miles of Cape Race, the extreme south-eastern angle of Newfoundland. It is a locality difficult to reach, as with nine days travel it was only possible to obtain two days at the locality itself. The object of this station is to secure tidal data with reference to the currents in the bays on the south coast of Newfoundland.

A list of the stations established, with the length of record obtained, is given below :—

Shelburne, N.S.—Gauge placed on the north side of the steamboat wharf. The wharf is built of piles, to which the gauge column is braced. Tidal record from July 7 till October 10. Observer, J. C. Morrison, harbour master.

Barrington Passage.—Gauge placed at Robertson's wharf, at which the local steamers call. Tidal record from July 12 till October 22. Observer, E. Nickerson, captain of the ferry steamer.

Clarke Harbour.—Gauge placed at the Government wharf, Swim's point, at the inner end of the harbour. Tidal record from July 2 till October 22. Mr Hayden here acted as observer.

Pubnico Bay.—Gauge situated at Lower East Pubnico, at D'Entremont's wharf; about half a mile above the lighthouse. Tidal record from June 27 till October 20. Observer, W. H. Amiro, customs officer.

Trepassey Bay, Newfoundland.—Instruments and fittings shipped from Ottawa, with full instructions, on June 19th. After much correspondence and enquiry, delivered at Trepassey August 1. Gauge placed at the steamboat wharf, and observations begun on August 6, but unavoidably interrupted from August 8 till the 21, the date of my arrival there. Satisfactory observations secured from August 21 till late in November. Observer, J. L. Murphy, customs officer.

These stations were all equipped with self-registering instruments of the Richard type. The tide columns were built of timber, with a clear area of 13 by 10 inches inside. The total length of the columns varied from 18 to 25 feet. The installation of

SESSIONAL PAPER No. 21

the gauges was similar to that described in the Report of December 1898, page 16, to which reference may be made.

Data for time and height.—It was not anticipated that there would be any difficulty in obtaining correct time at these localities : as they are all telegraph or telephone stations. But at Lower East Pubnico the telegraph office was closed : and the long-distance telephone elsewhere was not found satisfactory for the purpose. The only point where the time could be obtained correctly was at Barrington Passage, which is in reality the best centre of communication in the whole of this region. At the three other localities, chronometers were used, which were obtained from St. John, N.B., as soon as the necessity for them became evident. The observers were supplied with tables of correction for these chronometers, based upon their rates. The rate was also checked during the season, and at its close, by time comparisons. The time was thus kept correct to the nearest minute, which is as close as tidal observations can be made.

It was not deemed necessary to establish Bench-marks at any of these localities except Clarke harbour. At Shelburne and Pubnico, the wharves are of piling and are not liable to settlement : and the zero of the tide scale is fixed with reference to the cap of these wharves, so that it can be placed at the same elevation again should observations be resumed. The tide column at Trepassey, Newfoundland, stands on solid rock, and can be replaced without alteration in level if required again. At Clarke harbour the Bench-mark is an iron bolt drilled into the rock at $14\frac{1}{2}$ feet from the north-east corner of Swim's warehouse, which is the most northerly of a set of buildings extending to the Government wharf. The level of the zero of the tide scales at the various localities is defined as follows :—

Shelburne, N.S.....	Zero of tide scale	14.12 feet below cap of wharf.
Barrington Passage...	" "	14.42 " " "
Clarke Harbour.....	" "	21.98 " " the Bench-mark.
Pubnico Bay.....	" "	17.58 " " cap of wharf.
Trepassey, N'fd.....	" "	at rock surface, foot of tide-column.

FURTHER TIDE LEVELS AND BENCH-MARKS.

Repeated endeavours have been made to ascertain the relation at Halifax between the Admiralty datum, the Royal Engineers' datum, and the City datum, none of which accord with each other. In explaining these relations care will be taken to distinguish what is reliable from what is uncertain.

The most important of these from a marine point of view, is the Admiralty Low Water datum, to which the soundings on the chart of Halifax harbour are referred. This datum is fixed by reference to a Bench-mark in the Dockyard ; and it is defined as follows in a note on the chart of Halifax harbour : "The soundings are reduced to the level of Low Water Ordinary Spring Tides, viz. : 16.08 feet below a Bench-mark cut near the South-east angle of the Sail loft at the Dockyard." It is further to be noted that the tidal observations themselves show that the datum as thus defined, accords correctly with mean low water at spring tides.

The levels were carried over from this Bench-mark to the tide gauge, which is situated at the Marine and Fisheries' wharf ; and the Admiralty datum as thus defined has been used throughout the series of observations as the plane of reference to which all tide levels have been referred by this Survey. The observations at Halifax were begun in 1895 ; and the levels have been repeatedly checked from the same Bench-Mark in subsequent years ; and any changes in elevation at the gauge, due to settlement or other causes, have been carefully allowed for, to maintain the same elevation for reference throughout.

The levels of the Tidal Survey are thus consistent, and they are in accord with the chart datum. But it is highly desirable that the tide levels as now determined, should be known with reference to the other datum planes, to make them available in the construction of harbour works, city drainage, etc.

2-3 EDWARD VII., A. 1903

The best relation between the other two datum planes, was established by Mr. E. H. Keating when City Engineer at Halifax, from comparisons between twenty-one Bench-marks, which define the City datum and the Royal Engineers' datum respectively. From his original notes, the difference between them, as indicated by these Bench-marks, ranges from 1.61 to 1.96 feet, when two exceptional values are discarded which he has marked. The actual average of the nineteen remaining differences is 1.81 feet ; and the mean value which Mr. Keating has finally adopted, places the Halifax city datum at 1.85 feet below the Royal Engineers' datum. This value for the difference has since been generally adopted.

The height reached by the exceptional tide of October 5, 1869 known as the Saxby tide, was also determined by Mr. Keating in April 1876, from the best marks that could then be pointed out to him. From the mean level of these marks, he found the elevation which this tide reached at Halifax to have been 7.90 feet above the Halifax city datum.

A further endeavour was made this season, to connect the Halifax city levels with the Bench-mark in the Dockyard, to establish a relation with the Admiralty datum. But the city Bench-marks in that vicinity were found to have both "original" and "corrected" elevations ; besides showing a want of agreement with each other ; and no method of working out the comparisons could be devised to give a satisfactory result. Descrepancies ranging from four inches to a foot remained outstanding which could not be accounted for, as there was no means of knowing which of them had the greater balance of probability in their favour.

The elevation of the Bench-mark in the Dockyard is given as 11.05 feet above the Royal Engineers' datum on their own plans ; and it is also so noted on the chart of Halifax harbour ; but there was some doubt as to this, because the Royal Engineers' datum is presumably intended for Mean Sea Level. The true value of Mean Sea Level however, as now ascertained by this Survey from four complete years of continous observation, is found to differ by 1.55 feet from this value for their datum ; an error which is inadmissibly large where the range of the tide is only seven feet. From a comparison which has just been made by the Royal Engineers, the corrected elevation of this Bench-mark is 12.61 above their datum. This determination now serves to define the relations desired.

The tide levels given below, are defined by reference to the one Bench-mark. These levels have been repeatedly checked by myself ; and there is no error outstanding in them which exceeds 0.01 of a foot.

HALIFAX, N.S.—TIDAL LEVELS AND DATUM PLANES.		Above or below Admiralty Datum.
		Feet.
Bench Mark in the Dockyard, as above described, which records the Admiralty datum..		16.08
Coping of the Halifax Dry Dock.		10.97
Highest High Water during the tidal observations from 1895 to 1902. Occurred during a gale on November 25, 1901. Elevation reached.....		9.35
Mean Sea Level. Deduced from the hourly ordinates of the tide during four complete years of observation, as follows :—		
During one year, October 1895, to October 1896.....		3.391
" " January to December, 1897.....		3.515
" " " " 1898.....		3.512
" " " " 1899... ..		3.492
Mean value for the four years.....		3.478
Harmonic Tide Plane, or low water mark at a distance below Mean Sea Level given by the sum of the harmonic constants $M_2 + S_2 + K_1 + O$. Mean value of this sum for the four years 1851—1852 and 1860—1861=2.955. Value for the year 1895-6 = 3.093 feet below Mean Sea Level which in that year was 3.391. Average elevation resulting....		0.41

SESSIONAL PAPER No. 21

HALIFAX, N.S. TIDAL LEVELS AND DATUM PLANES. <i>Continued.</i>	Above or below Admiralty Datum.
	Feet.
Admiralty Datum, or low water at ordinary spring tides ; at 16·08 feet below the Bench Mark. Used as the plane of reference throughout the tidal observations since their commencement in 1895.....	0·00
(The tide tables for 1903 and onwards, are referred to this plane of reference.)	
Level of the plane of reference used for the early tidal observations of 1851-1852 and 1860-1861. Average for the four years = 4·377 feet below Mean Sea Level : or 1·421 below the Harmonic Tide Plane. Mean elevation resulting, below Admiralty datum.....	0·96
(The tide tables for the years 1897 to 1902 are referred to this plane of reference.)	
Sill of the Halifax Dry Dock. Level of the granite sill of the dock, below Admiralty datum.....	23·49
(The depth of water on the sill of the dock at any tide, may therefore be found by adding 23·4 feet to the height of high water as given in the tide tables.)	

Digby.—A Bench-mark was cut on a flight of granite steps to fix the levels of the tidal observations of 1898 : but unfortunately these steps have since been pulled down. Accordingly, this season, a new Bench-mark was set upon the post office building, built since ; there being no masonry buildings in the town in 1898. The levels were obtained from known points on the timberwork of the long Digby pier, which were compared with each other and carried to the new Bench-mark. This is on the north side of the tower of the post office building, at the joint between the granite foundation and the brickwork. It is marked by a broad arrow cut at the upper edge of the granite, at two feet west of the basement window in that side of the tower.

	Feet.
New Bench-mark as above described. Elevation.....	108·98
Top of cap on north side of pier, where the tide gauge column was placed. Elevation originally taken as 100·00 for convenience in the tide measurements	100·00
Highest high water observed in 1898 ; July 3, p.m.	93·90
Lowest low water observed ; July 5, a.m.	64·20
Inlet at foot of tide column.....	63·00

Yarmouth.—As noted in the Report of December 1898, the best point for a permanent Bench-mark which could be found in the vicinity of the tide-gauge, was the brick chimney of the Kemptville Lumber Company, as it stands on a stone base built in cement ; and as the foundation is carried down to the rock, it is not liable to settlement. The point used as a Bench-mark is the joint between the stone foundation and the brickwork, at the northwest corner.

Levels have been taken since, on two occasions, to obtain the relation between the Tidal Survey levels and the town datum in Yarmouth ; and in this endeavour the Town Engineer, Mr. E. S. Matheson, has given his co-operation. In the best comparisons that can be obtained, there is still an uncertainty of over two inches in the result however ; as will be seen from the elevations referred to the Yarmouth town datum, given below. The elevations of some additional points are now given ; and the slight variation in the elevation of the tide scale is also indicated. The rail level at the railway crossing at the foot of Forrest street was originally taken as 100·00, but this was found to have changed more than an inch between 1898 and 1901, and was therefore thrown out as unreliable. The levels on hydrants are taken on top of the spindle.

2-3 EDWARD VII., A. 1903

	Feet.
Bench-mark on chimney, as above described	108·53
On hydrant at the corner of Cliff and Main streets.....	137·31
Elevation above Yarmouth town datum = 141·88.	
On hydrant at the foot of Horton street, near Water street	103·87
On hydrant at the foot of Brown street, corner of Water street.....	103·32
Top of stone post at south-east corner of L. E. Baker's office ; at head of the Yarmouth S.S. company's wharf.....	94·81
Elevation above Yarmouth town datum = 99·54.	
Highest high water observed in the season of 1898 ; July 4, p.m.....	90·45
Lowest low water observed in that season ; July 5, a.m.....	74·15
Zero of Tide Scale ; as originally set in 1898.. ..	72·36
" " after being replaced more than once by a new scale. Eleva- tion in September, 1901.....	72·37

The above levels were taken in 1901 and 1902 ; and as in the case of all the Tidal Survey levels published, they are reliable within 0·01 of a foot. The zero of the tide scale in 1901 was checked by two series of measurements made by two different methods ; and the alteration in elevation since 1898 may be disregarded where the range of tide is sixteen feet.

OBSERVATIONS OF THE CURRENTS IN THE SEASON OF 1902.

Northumberland Strait.—The current at the narrowest part of this strait was observed during last winter by noting the movements of the ice as seen from the two sides at Cape Tormentine and Cape Traverse. There was, however, less ice than usual during the season. Again, in the summer, notes were taken of the time of the turn of the current in mid-strait between these two capes. The notes were taken during the lobster season by fishermen while setting or hauling their traps. Independent notes from two men were secured under the supervision of Mr. E. Crosby, the station agent at Cape Traverse, who already had the experience of observing the drift of the ice in winter. Observations have thus been secured in winter from February 3 to March 29, and in summer from June 2 to August 23, with a comparatively slight expenditure.

Neighbourhood of Cape Sable, N.S.—In the offing of the coast from Cape Sable to Pubnico bay, some observations were taken this season by arranging with the fishermen to note the time of the turn of the current. The object in view was to obtain the first indraught of the current into the Bay of Fundy, with relation to the rise and fall of the tide as recorded simultaneously by the gauges on the shore opposite. The in-shore fishermen in these parts do not anchor their boats, however, which makes their notes less definite than might be desired. Also, the season was unusually foggy, which occasioned much interruption in the record they were able to make. The result though thus imperfect, may give indications which will be of service until the work can be better done with adequate appliances.

South Coast of Newfoundland.—Information regarding the currents was obtained wherever possible while travelling during the season ; from the captains of coasting steamers, and schooners accustomed to fish on the outlying banks. With regard to the alleged indraught into the bays on the south coast of Newfoundland, the best information obtained this season goes to corroborate the statements already given out by this Department, which were based upon inquiries previously made by this Survey. (See Notice to Mariners, No. 103 of 1901.) What has now been learned will also be of value as a guide in the further investigation of the currents on that coast.

Respectfully submitted,

W. BELL DAWSON,
Engineer in charge of Tidal Survey.



GANNET ROCK LIGHTHOUSE, BAY OF FUNDY.



GRAND HARBOUR, N. B., LIGHTHOUSE.



DIGBY GUT, LIGHTHOUSE AND FOG ALARM.



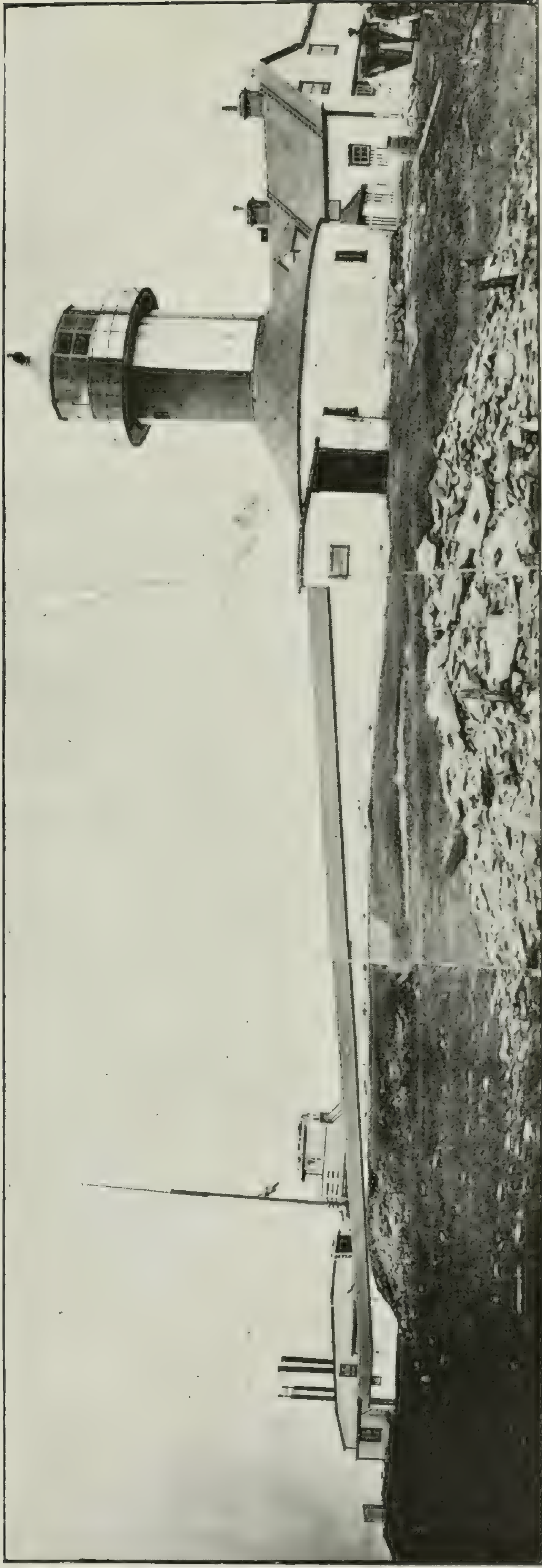
LOUISBOURG, N. S., LIGHTHOUSE.



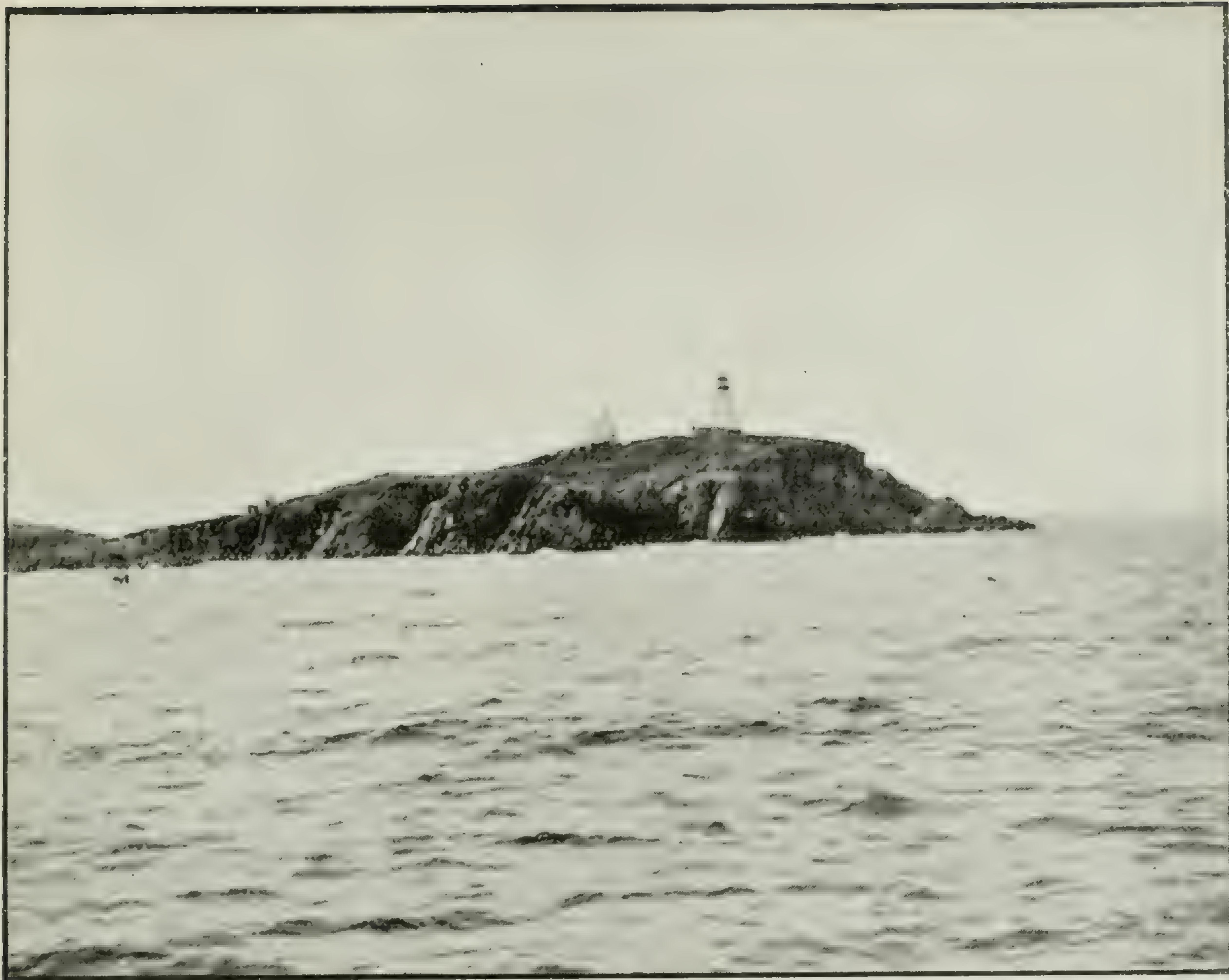
CAPE RACE, NEWFOUNDLAND, LIGHTHOUSE AND FOG ALARM.



BELLE ISLE, HIGH LIGHTHOUSE.



CAPE RACE, NEWFOUNDLAND, LIGHTHOUSE AND FOG ALARM.



NORTH EAST POINT, ST. PAUL ISLAND LIGHTHOUSE.



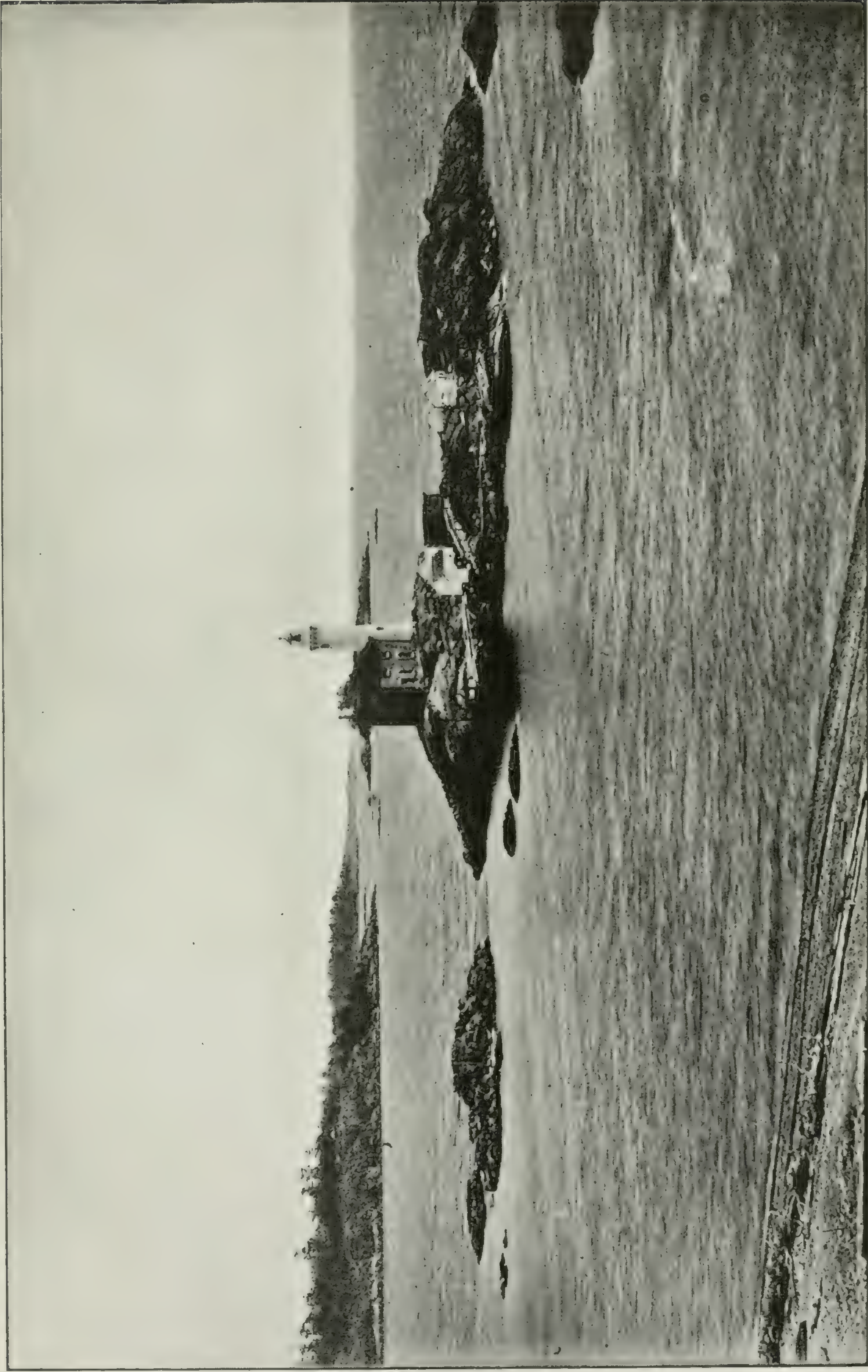
CAPE RACE, NEWFOUNDLAND, WATER SUPPLY FOR FOG ALARM.



WEST POINT, ANTICOSTI, LIGHTHOUSE.



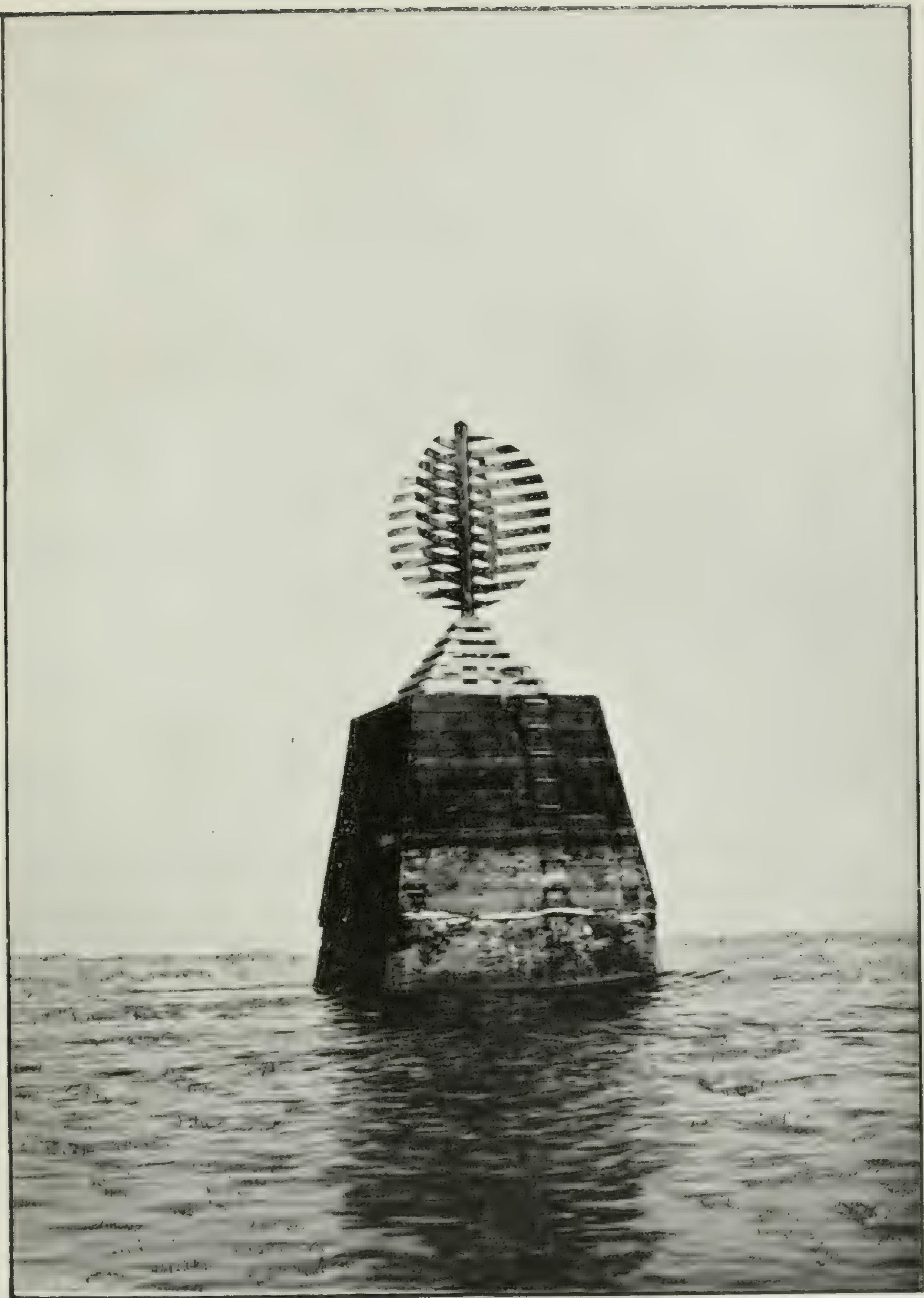
PELEE PASSAGE, LAKE ERIE, LIGHTHOUSE, UNFINISHED.



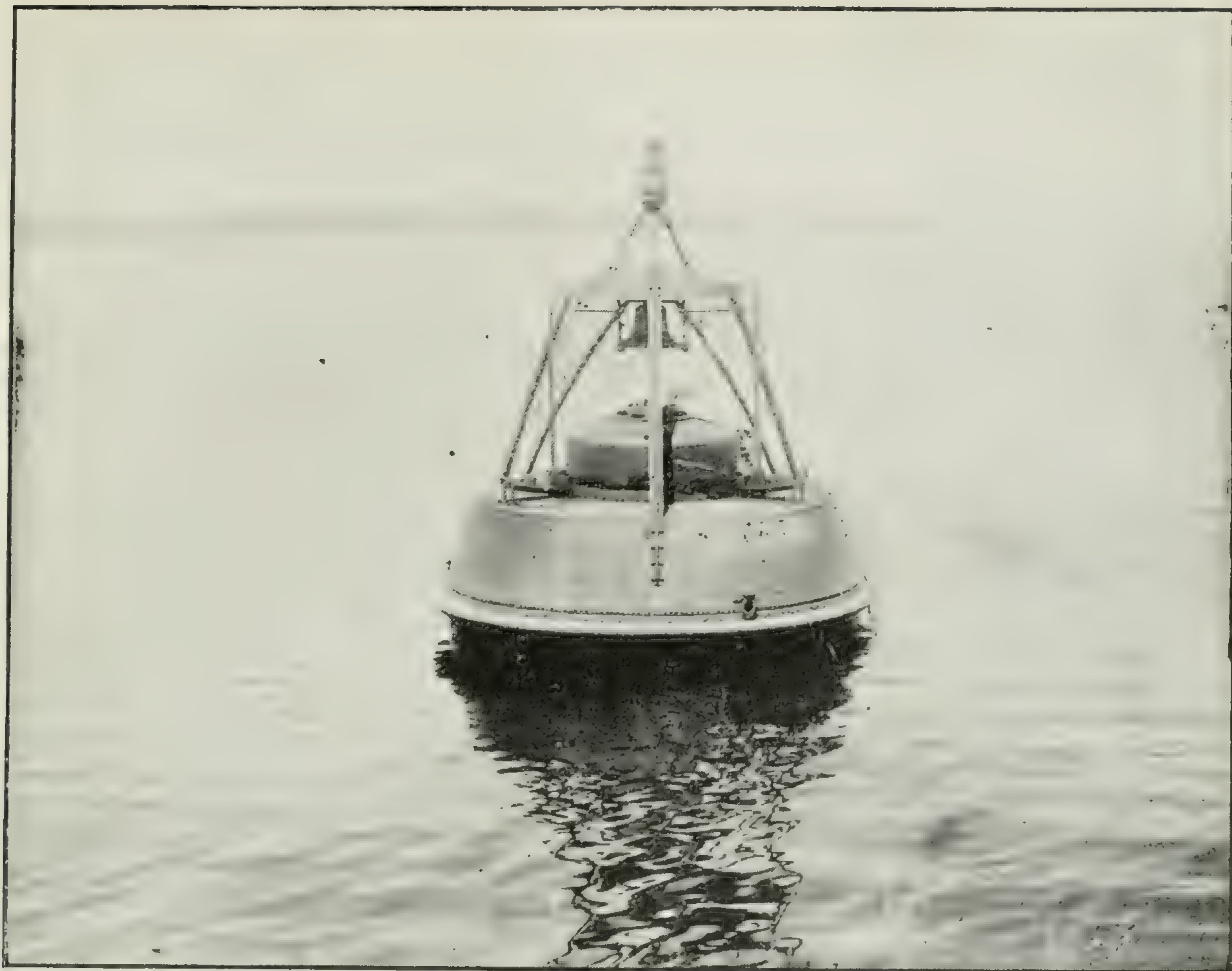
FISCARD LIGHTHOUSE, B. C.



SAND HEADS, FRASER RIVER, B. C. LIGHTHOUSE.



GABRIOLA REEF BEACON, B. C.



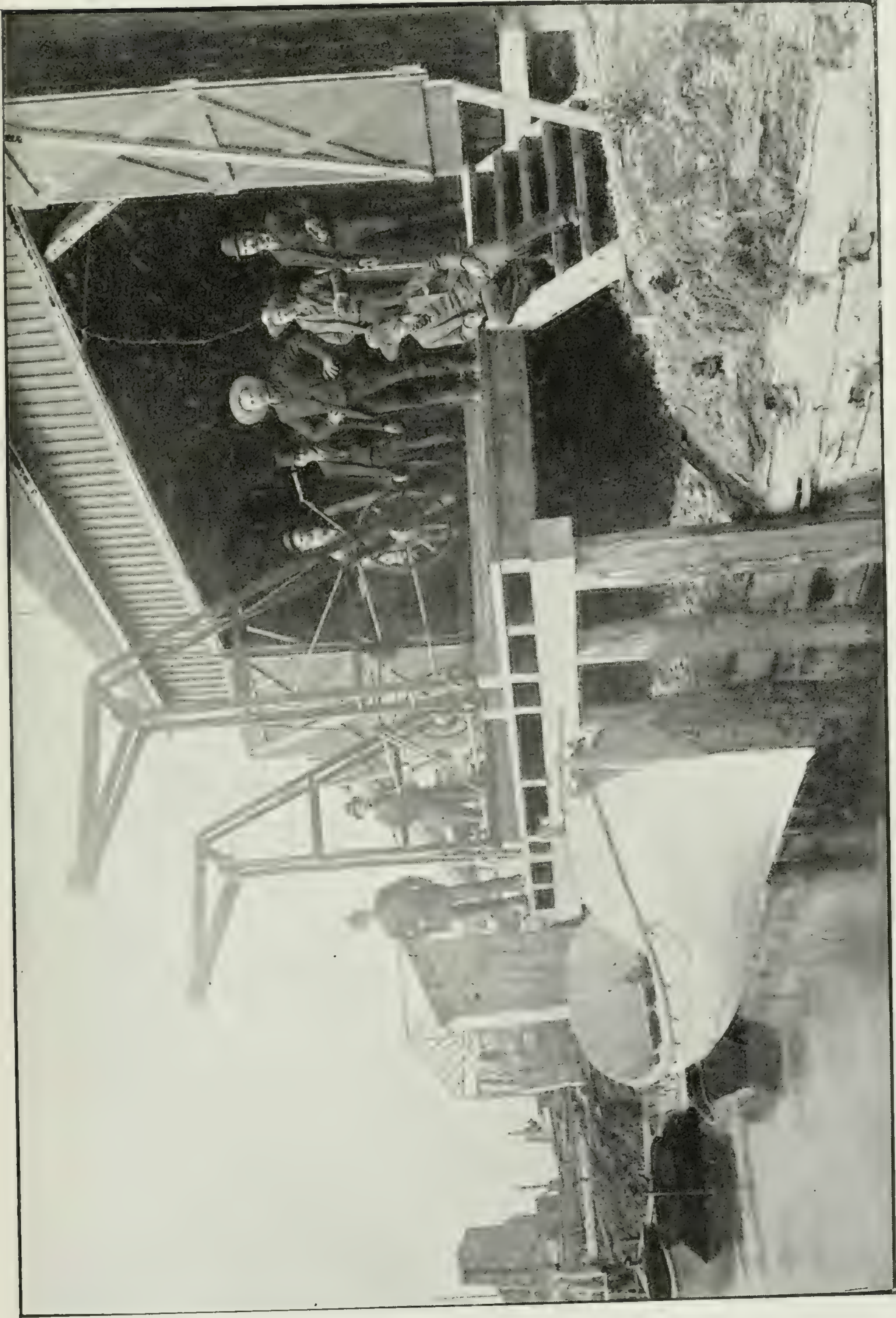
STE. CROIX, QUE., GAS BUOY.



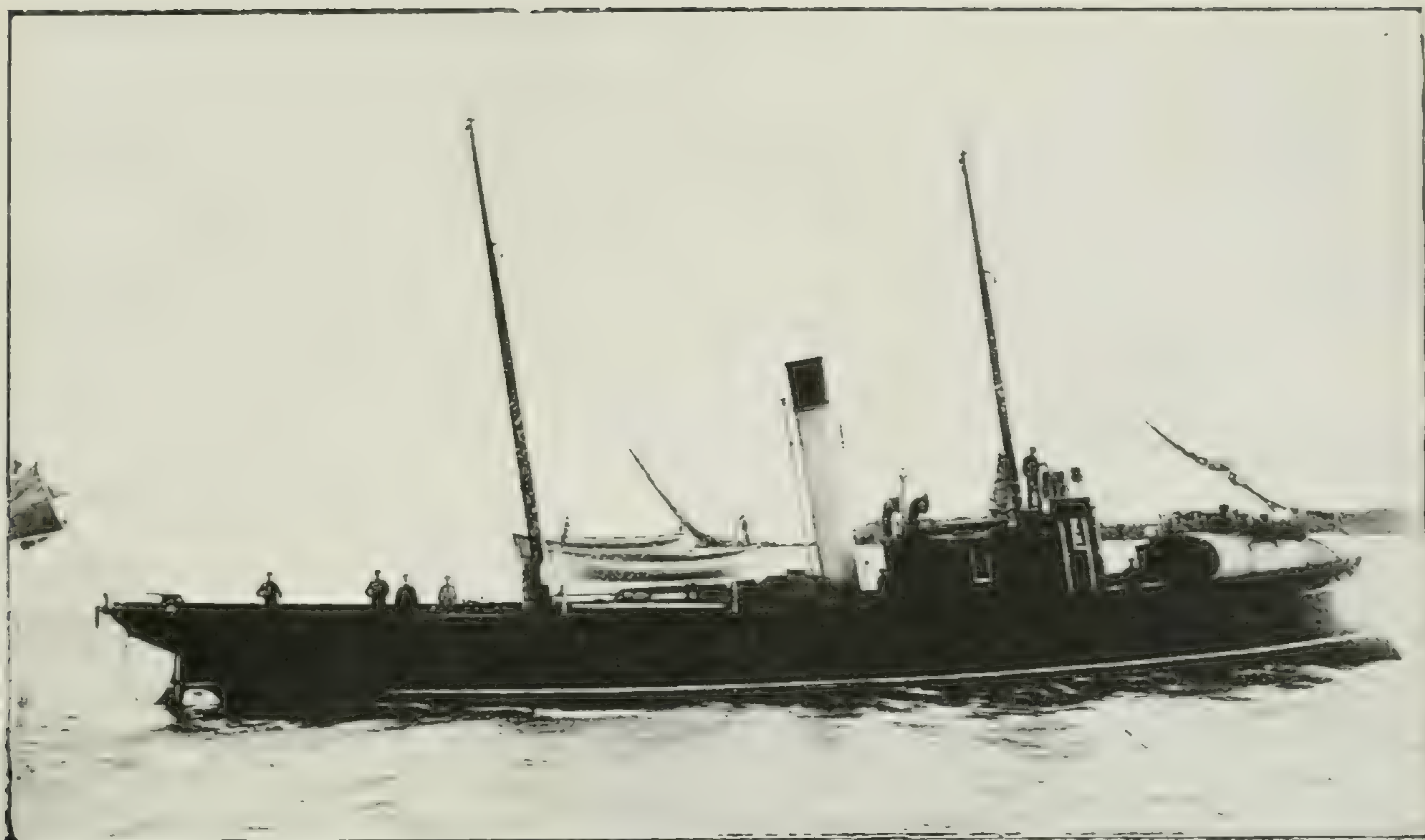
TIDE GAUGE. HALIFAX, N. S.



LIFE SAVING STATION, SEAL COVE, BAY OF FUNDY.



LIFE SAVING STATION, PORT STANLEY, LAKE ERIE.



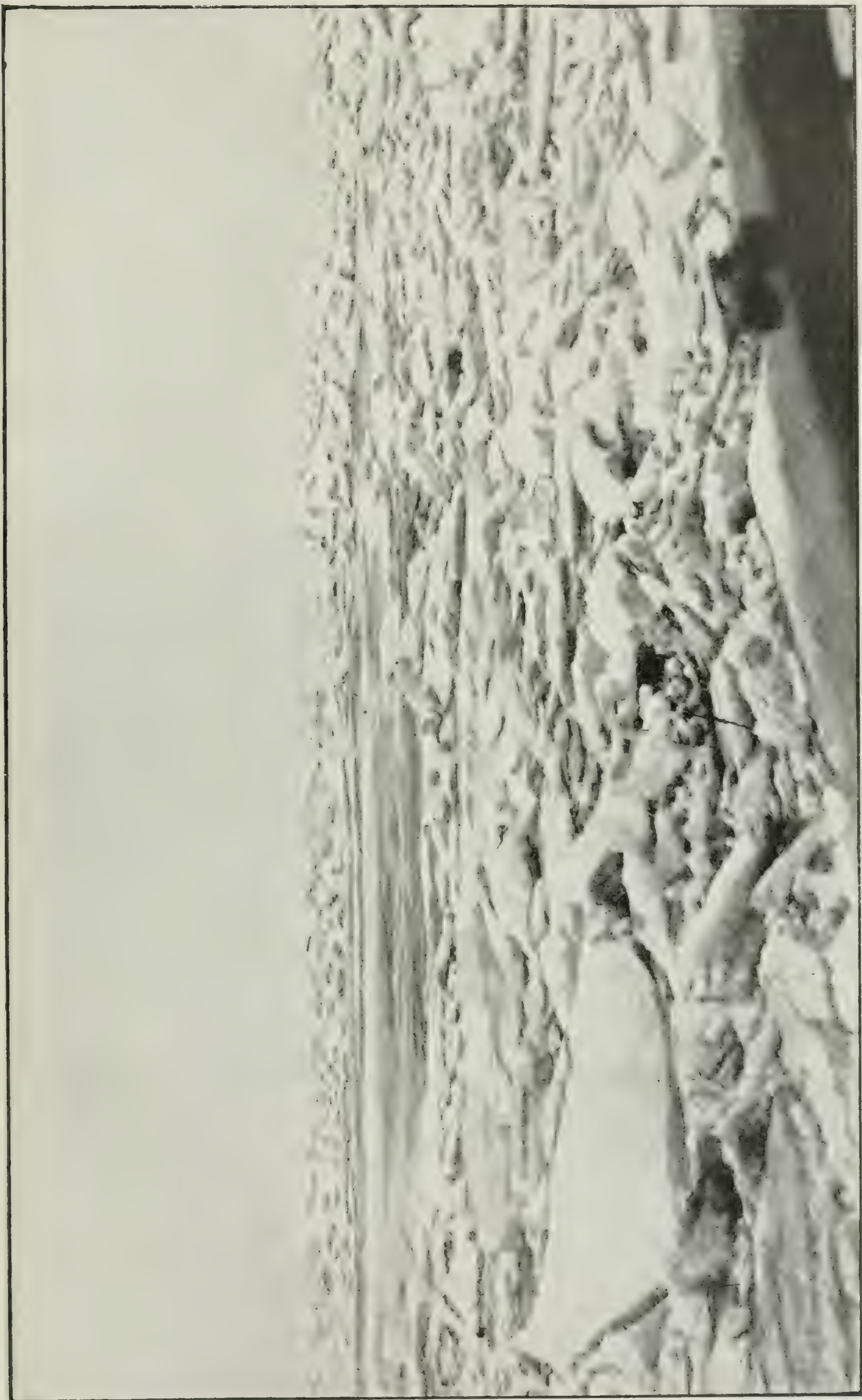
"CURLEW."



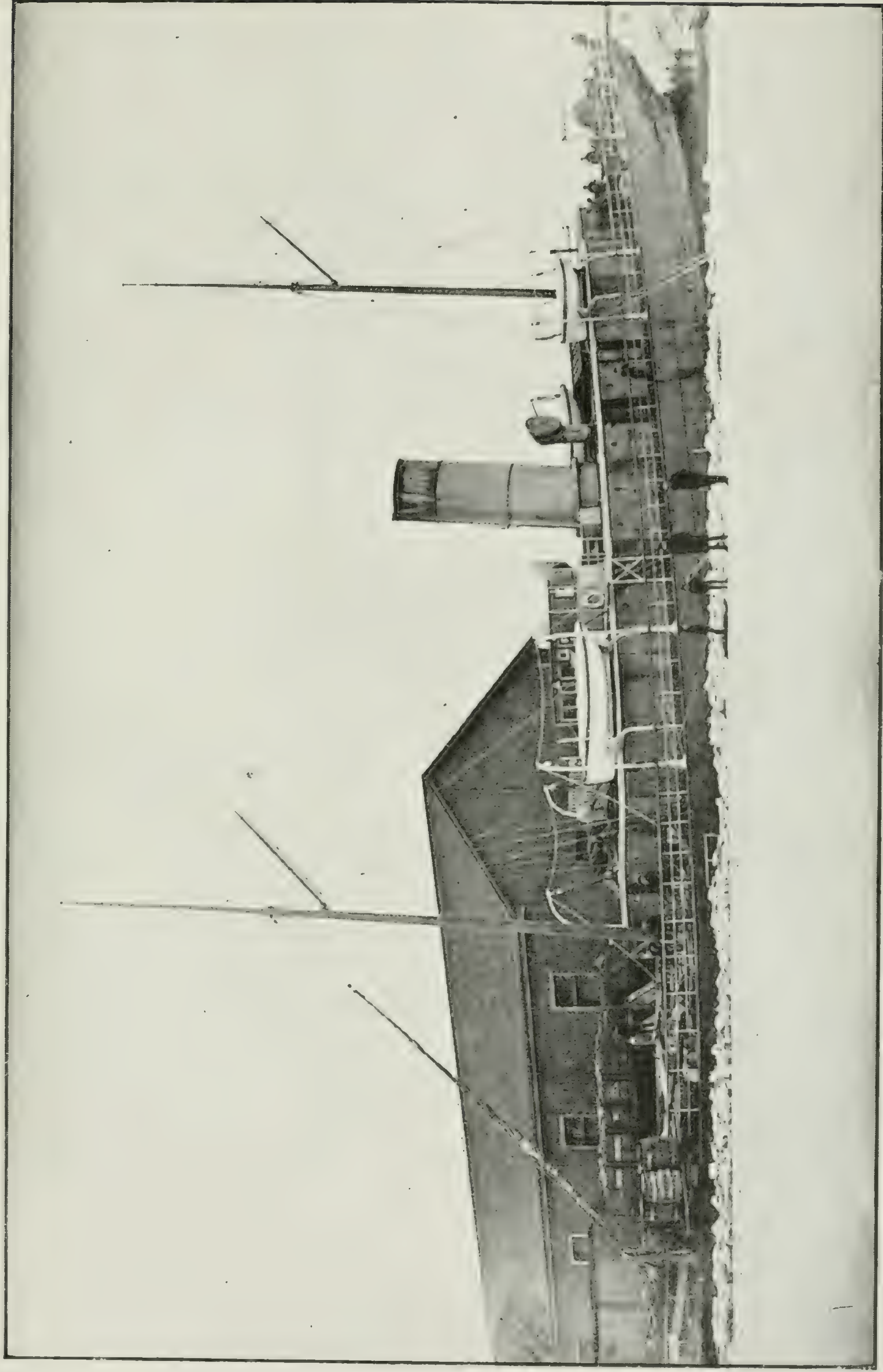
"QUADRA."



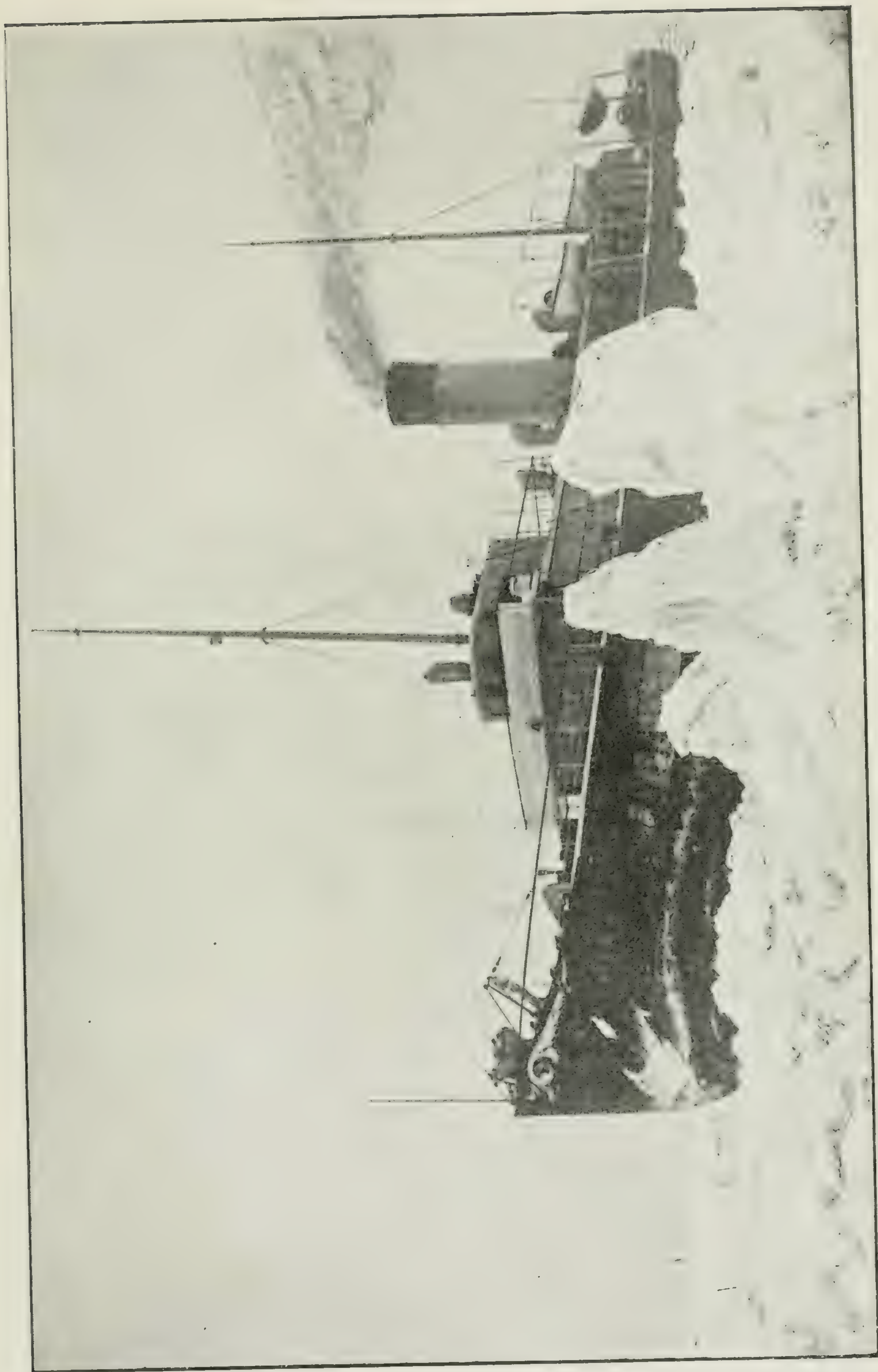
"LA CANADIENNE."



ICE IN STRAIT OF NORTHUMBERLAND.



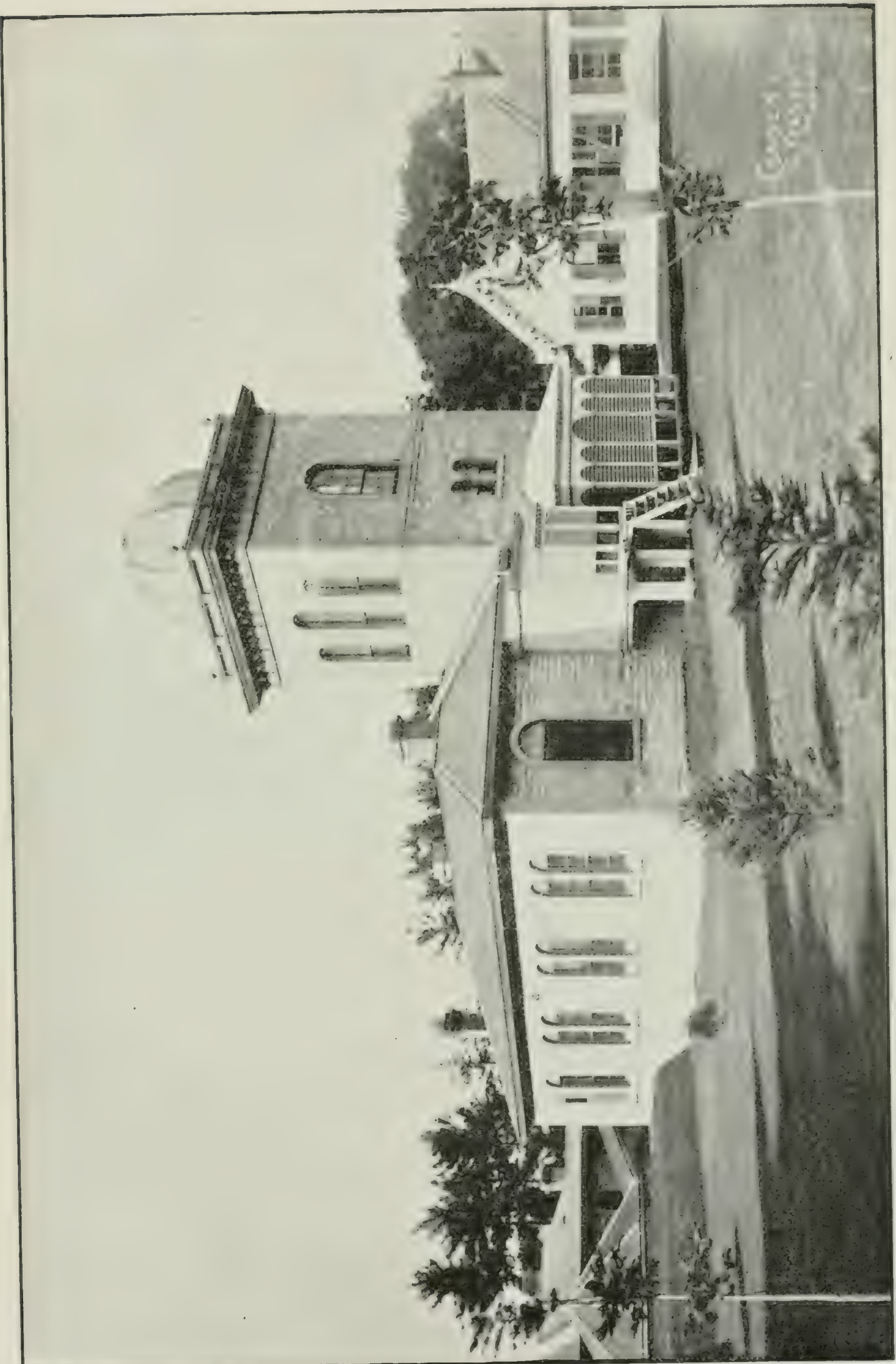
STANLEY. FORWARD WATER BALLAST TANKS FILLED TO PUT ON PROPELLER IN PICTOU HARBOUR.



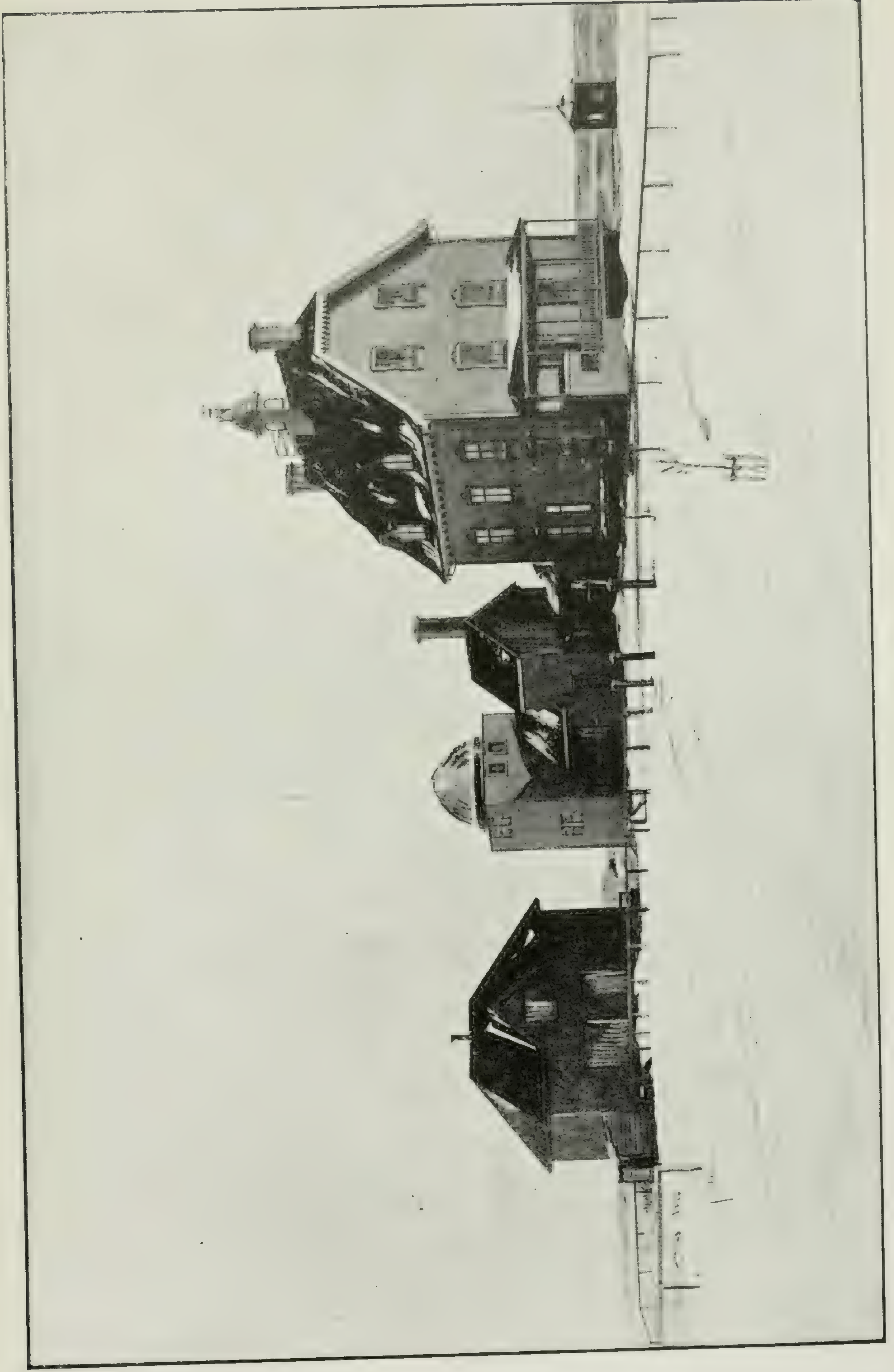
MINTO WORKING HER WAY THROUGH ICE IN STRAIT OF NORTH BERRAND BETWEEN PRINCE EDWARD ISLAND AND MAINLAND.



ICE-BOAT, PRINCE EDWARD ISLAND, WINTER MAIL SERVICE.



MAGNETIC OBSERVATORY, TORONTO.



METEOROLOGICAL SERVICE. QUEBEC OBSERVATORY.

P.T. 13^h 20^m.1
8 large waves gradually increasing
Max. 14.25.1 G.M.T.

10

End about 17^h 45^m

Amp. 55 m.m. Toronto 9th August 1900

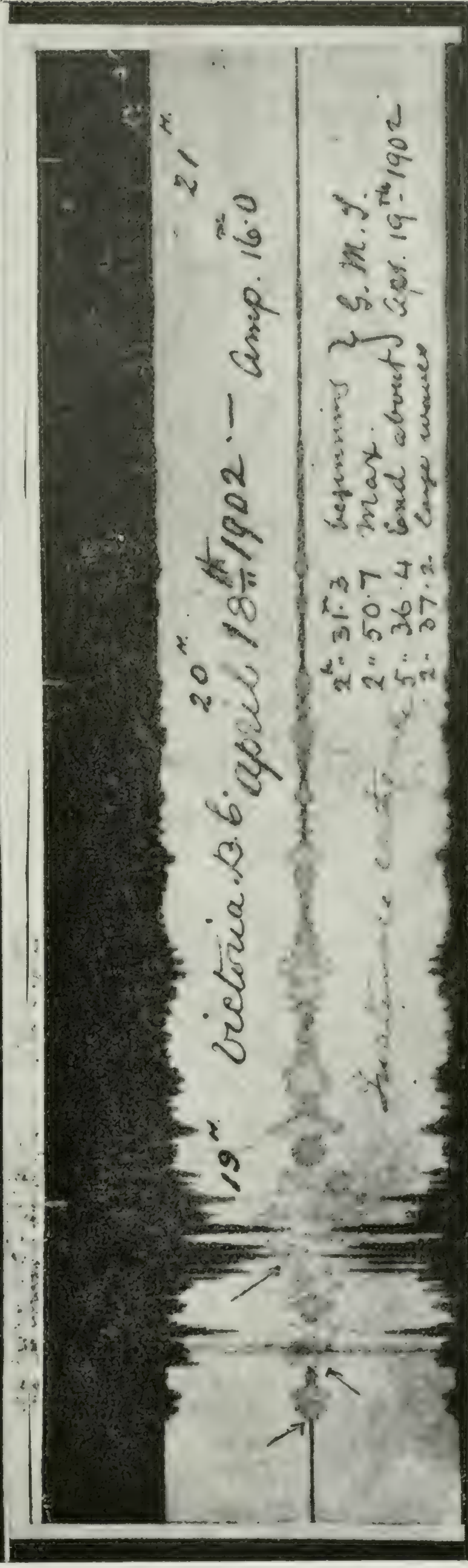
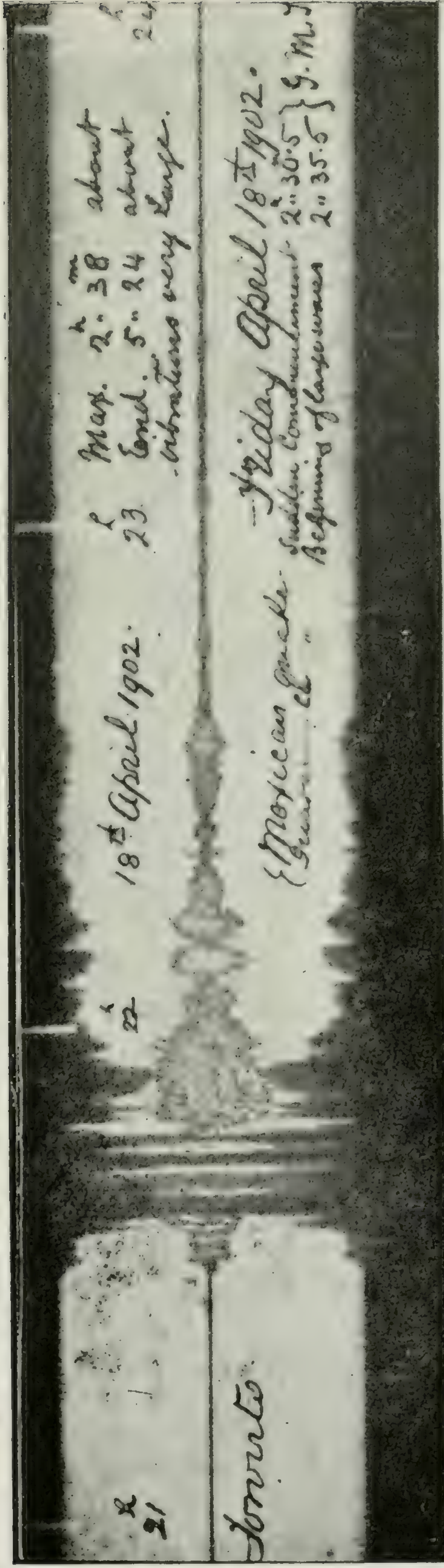
Japanese Earthquake.

Aug. 9th 1900

VICTORIA
B.C.

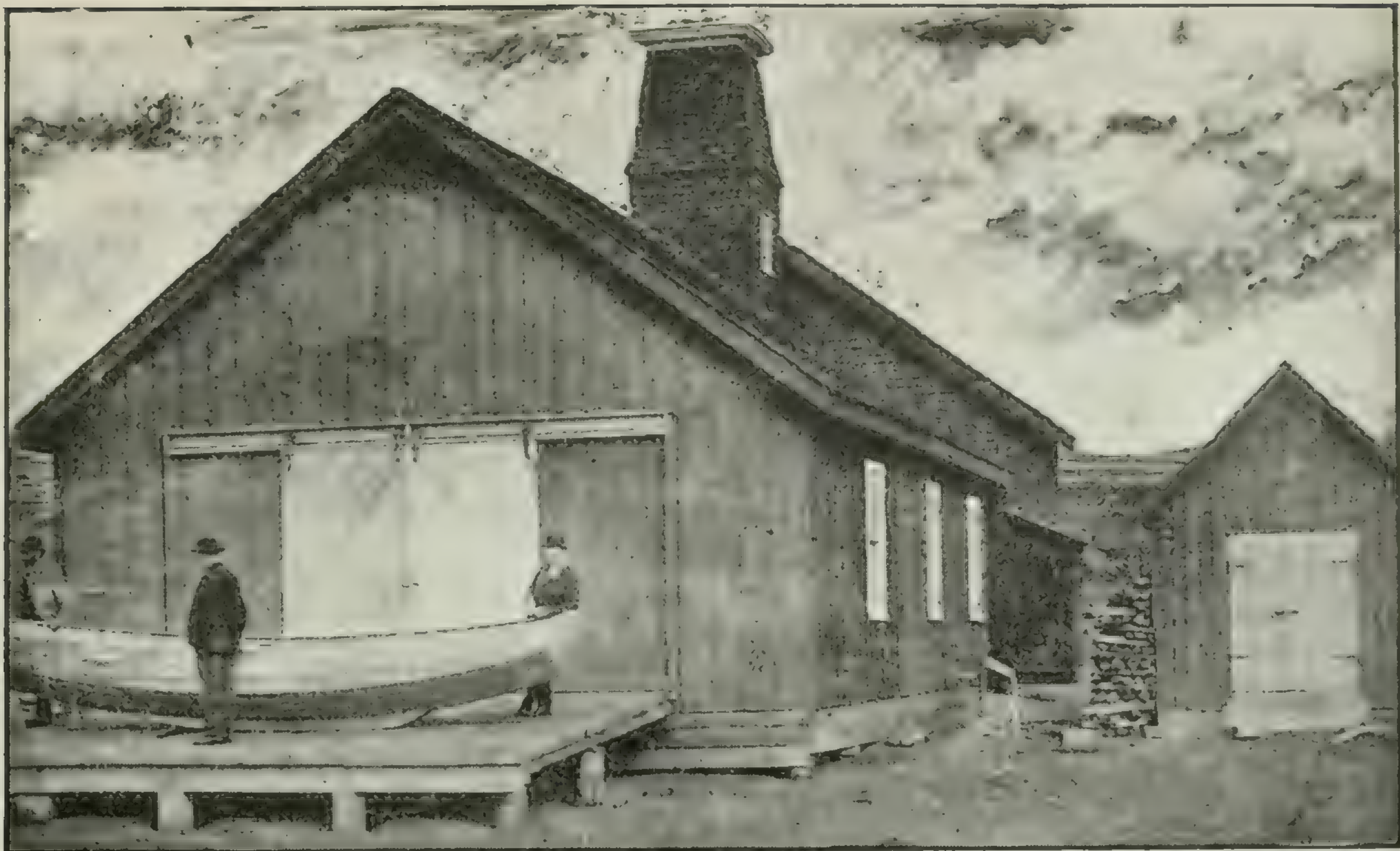
P.T. 13^h 14^m.2 } G.M.T.
MAX. 14^h 14^m.4 }

End 18^h 2^m.6 about
Amp. about 30.0 m.m.



METEOROLOGICAL SERVICE.

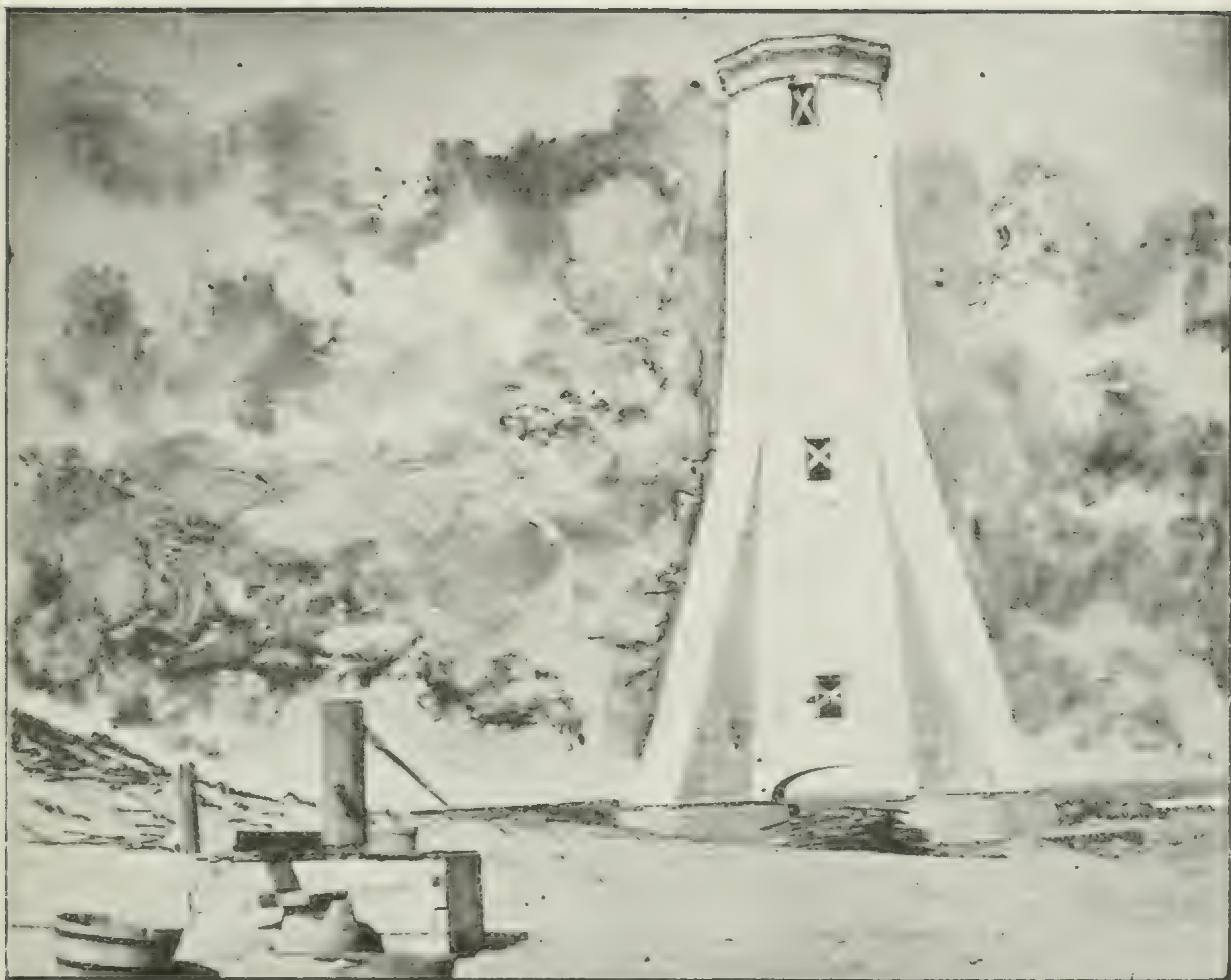
SEISMOGRAM SHOWING REGISTRATION OF EARTH WAVES AT TORONTO AND VICTORIA, B. C., CAUSED BY JAPANESE EARTHQUAKE, AUGUST 9, 1901



ICE BOAT HOUSE, CAPE TRAVERSE, PRINCE EDWARD ISLAND.



SULPHUR MOUNTAIN, BANFF, SITE OF METEOROLOGICAL STATION.



WEST END, SABLE ISLAND, LIGHTHOUSE, DURING REMOVAL.

PART II

STATEMENT OF EXPENDITURE—STATEMENT OF REVENUE—METEOR-
OLOGICAL SERVICE—MAGNETIC OBSERVATORIES—SIGNAL
SERVICE—BOARD OF EXAMINERS OF MASTERS AND
MATES—LIVE STOCK SHIPMENTS—STATEMENT OF
WHARFS—LIFE-BOAT STATIONS—STATEMENT
OF SICK MARINERS DUES—REWARDS FOR
HUMANE SERVICE—STEAMBOAT IN-
SPECTION—LIST OF LIGHT-
KEEPERS AND LIGHT
STATIONS.

APPENDIX No. 1.

GENERAL SUMMARY of Expenditure for Fiscal Year ended June 30, 1902.

Service.	Amount.	Total.
	\$ cts.	\$ cts.
Ocean and River—		
Maintenance and repairs to Dominion steamers.....	241,060 98	
Construction new steamers to replace <i>Newfield</i> and <i>Druid</i>	211,465 94	
Examinations of Masters and Mates.....	3,305 59	
Rewards for saving life, &c.....	8,278 55	
Investigations into wrecks	1,824 55	
Registry of shipping.....	607 23	
Tidal service....	8,925 33	
Removal of obstructions in navigable waters.....	1,325 25	
Winter mail service.....	8,835 86	
Marine biological service.....	1,998 85	
Export cattle trade.....	3,321 23	
Unforeseen expenses.....	3,490 29	
New life saving station Long Point.....	1,780 52	
		496,220 17
Lighthouse and Coast—		
Salaries and allowances of lightkeepers....	218,980 46	
Agencies, rents and contingencies.	16,096 81	
Maintenance and repairs to lighthouses, &c	290,052 47	
Construction of lights.....	117,023 95	
" Lower Traverse.....	31,595 09	
" middle ground, Pelee Passage	10,095 05	
Signal service....	6,452 56	
Repairs to wharfs.....	2,824 28	
Salaries extra employees	2,967 35	
		696,088 02
Scientific Institutions, &c.—		
Observatory, Toronto.....	2,741 09	
Meteorological service.....	77,406 37	
Hydrographic surveys.....	25,488 64	
Steamer to replace <i>Bayfield</i>	50,000 00	
Building observatory Sulphur mountain.....	55 00	
		155,691 10
Marine Hospitals		
Treatment of sick and disabled seamen.....	51,027 80	
Shipwrecked and distressed seamen	799 33	
		51,827 13
Steamboat Inspection —		27,493 80
Charles Morrison, back pay.....	223 00	
W. H. Smith, travelling expenses.....	3,691 69	
R. H. and Chas. Neal, gratuity to sons of Chas. Neal....	136 85	
		4,051 54
Civil government—salaries.....	61,183 32	
" " contingencies.....	9,063 00	
		70,246 32
Total Marine, carried forward.....		1,501,618 08

2-3 EDWARD VII., A. 1903

GENERAL SUMMARY of Expenditure for Fiscal Year ended June 30, 1902—*Concluded.*

Service.	Amount.	Total.
	\$ cts.	\$ cts.
Brought forward total Marine.		1,501,618 08
FISHERIES.		
Salaries and disbursements of fishery overseers, &c.....	104,880 41	
Fish breeding	79,891 85	
Fisheries protection service.....	114,011 78	
Building fishways, &c.....	928 12	
Legal and incidental expenses.....	6,184 55	
Fishery exhibit.....	1,753 82	
Distributing fishing bounty.....	4,564 43	
Oyster culture.....	6,419 26	
Cold storage.....	11,671 30	
Construction of steamer for customs and fisheries in British Columbia.....	38,711 91	
Legal expenses <i>re</i> seizure of sealing vessels by Russian cruisers in North Pacific.....	2,936 88	
Issuing licenses to United States vessels.....	472 20	
Fisheries biological laboratory.....	1,482 15	
J. and C. Noble, \$15,563.00, and McCarthy, Osler, Hoskins & Creelman, \$3,000.....	18,563 00	
David Creed.....	200 00	
Behring sea award.....	605 05	
Fisheries revenue.....	50 50	
Gratuities to widow of J. Newman, \$150.00; widow of R. R. Hogg, \$150.00...	300 00	
		393,627 21
Total Marine and Fisheries.....		1,895,245 29

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

A. W. OWEN,
Accountant.

APPENDIX No. 2.

STATEMENT of Revenue of Marine and Fisheries Department for Fiscal Year ended June 30, 1902.

Service.	Refunds.		Amount.
	\$	cts.	\$
Harbours, piers and wharfs.....	14,662	28	14,484 19
Dominion steamers.....	11,308	65	11,307 65
Examinations (masters and mates)			5,288 52
Fines and forfeitures.....	344	61	176 75
Steamboat inspection fund			37,428 92
" engineers' certificates.....			910 00
" inspection of barges.....			120 00
Sick mariners' fund	66,115	09	65,853 83
Marine registry searches....			48 94
Signal station service.....			2,800 66
Shipping forms.			24 00
Casual revenue, sundries.....	10,175	96	10,163 96
			148,607 42
FISHERIES.			
Ontario			373 42
Quebec.....			2,498 85
Nova Scotia.....	6,084	65	6,062 15
New Brunswick.....		22 59	11,658 34
Prince Edward Island.....	1,843	45	1,839 45
Manitoba.....		4 00	2,279 00
Northwest Territories.....	950	07	946 07
British Columbia.		4 00	41,178 65
Yukon Territory.	1,130	00	1,110 00
			67,945 93
Licenses to United States fishing vessels.....			11,223 65
			79,169 58

RECAPITULATION.

Marine revenue	\$ 148,607 42
Fisheries "	79,169 58
	<u>\$227,777 00</u>

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

A. W. OWEN,
Accountant.

2-3 EDWARD VII., A. 1903

APPENDIX No. 3.

STATEMENT of Steamboat Inspection Dues collected during the Fiscal Year ended
June 30, 1902.

	Amount.		Amount.
<i>Ontario.</i>	\$ cts.	<i>Nova Scotia.</i>	\$ cts.
Amherstburg.....	36 16	Amherst.....	25 04
Belleville.....	62 72	Annapolis.....	7 56
Brockville.....	104 36	Baddeck.....	23 68
Chatham.....	84 22	Canso.....	21 80
Collingwood.....	1,088 80	Digby.....	24 44
Cornwall.....	115 20	Halifax.....	2,923 76
Deseronto.....	170 60	Kentville.....	731 28
Fort Erie.....	21 60	Liverpool.....	20 96
Fort William.....	55 36	Lockeport.....	6 20
Goderich.....	119 80	Lunenburg.....	22 36
Hamilton.....	330 52	North Sydney.....	351 40
Kingston.....	1,423 16	Pictou.....	64 12
Lindsay.....	175 36	Port Hawkesbury.....	87 88
Midland.....	465 20	Sydney.....	94 12
Morrisburg.....	57 17	Windsor.....	29 96
Napanee.....	20 92	Yarmouth.....	126 84
Niagara Falls.....	5 64		
Ottawa.....	1,047 24		4,561 40
Owen Sound.....	1,375 00		
Parry Sound.....	296 12	<i>Manitoba.</i>	
Peterboro'.....	182 00	Brandon.....	5 56
Picton.....	232 84	Winnipeg.....	374 60
Port Arthur.....	228 50		380 16
Prescott.....	166 44		
Rat Portage.....	460 88	<i>British Columbia.</i>	
St. Catharines.....	179 60	Kaslo.....	206 40
St. Thomas.....	130 00	Nanaimo.....	8 52
Sarnia.....	441 20	Nelson.....	698 56
Sault Ste Marie.....	498 28	New Westminster.....	487 76
Simcoe.....	36 76	Vancouver.....	1,181 72
Stratford.....	171 64	Victoria.....	3,624 04
Toronto.....	2,371 72		6,207 00
Trenton.....	26 56		
Wallaceburg.....	31 84	<i>Prince Edward Island.</i>	
Windsor.....	869 64	Charlottetown.....	366 84
	13,033 05	Summerside.....	7 64
<i>Quebec.</i>			374 48
Cookshire.....	19 16	<i>North-west Territories.</i>	
Montreal.....	5,066 44	Calgary.....	11 40
Quebec.....	1,816 12	Dawson.....	1,725 84
St. Johns.....	54 60	White Horse.....	1,574 48
Sorel.....	205 40		3,311 72
Stanstead.....	62 04		
Three Rivers.....	222 60		37,428 92
	7,446 36		
<i>New Brunswick.</i>			
Chatham.....	216 84		
Dalhousie.....	87 72		
Fredericton.....	28 60		
Newcastle.....	48 68		
St. John.....	1,541 07		
St. Stephen.....	141 84		
	2,064 75		
		Grand total.....	

SESSIONAL PAPER No. 21

APPENDIX No. 4.

METEOROLOGICAL SERVICE.

METEOROLOGICAL OFFICE,

TORONTO, September 30, 1902.

Lt.-Col. F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit the thirty-first annual report of the Meteorological Service of Canada, this report being for the fiscal year July 1, 1901, to June 30, 1902, with Appendices A and B, reports of the St. John and Quebec observatories.

The number of persons in receipt of pay from the Meteorological Service on June 30, for various duties performed in connection therewith was 166. Of this number nineteen are employed in the central office, and with a few others at outside stations devote their whole time to the work, others are occupied in observing during only a portion of each day, and a third portion is employed only to attend to the display of storm signals when notified.

Since the issue of my last annual report the following stations have been opened :

BRITISH COLUMBIA.

Class II.—Golden, C. E. Hamilton.
“ II.—Revelstoke, Fred Fraser (resumed).

NORTH-WEST TERRITORIES.

Class II.—Melford, A. F. Wild.
“ II.—Lethbridge, C. B. Bowman.
“ II.—Abnerthy, F. M. Auld.
“ II.—Duck Lake, A. J. McKenna.
“ II.—Threehills Creek, W. E. Culler.
“ II.—Bon Accord, J. Schofield.
“ III.—Whitewood, Rev. T. N. Harrowell.

MANITOBA.

Class II.—Oakbank, Alfred Goodridge (from class III).
“ II.—Pembina Crossing, R. N. Lea (from class III).
“ II.—Almasippi, W. Irvine.

ONTARIO.

Class II.—St. Catharines, J. S. McCelland.
“ II.—Renfrew, W. C. Ewing.
“ II.—Gravenhurst, J. H. Elliott, M. D. (Sanitorium).
“ Newburgh, P. W. Brown.
“ III.—Newburg, P. W. Brown.

2-3 EDWARD VII., A. 1903

The sunshine recorder at Durham has been removed to Gravenhurst and placed in charge of Dr. Elliott.

The following stations from various reasons ceased to report :— Coldwater, Ont., death of observer : Durham, Ont., death of observer : Stouffville, Ont., observer removed ; Sherbrooke, Que.

There are now in the Dominion 523 Meteorological stations using instruments which have been supplied by the government. The observers at 245 of these stations take the observations voluntarily, sending regular monthly returns to the central office, and to these persons is due the hearty thanks of the service. At 37 stations, lying chiefly in the far northern territories of Canada, and at lighthouses in the Gulf of St. Lawrence, small gratuities are allowed observers. At 41 stations distributed at nearly equal intervals throughout the Dominion, three or more observations are taken daily and as the observers are paid salaries, promptness and careful attention to duty is insisted upon. From 36 of these stations two reports are daily telegraphed to Toronto to be used in the preparation of the daily weather chart.

CENTRAL OFFICE.

There has been no change in the staff at the central office except that Mr. W. R. Kingsford accepted a commission in the 3rd Mounted Rifles and left for South Africa on April 16, and Miss Ballard has since been employed as Assistant Secretary.

I would again respectfully assure you that the office is undermanned.

In the report I had the honour to make last year the routine work of the office was outlined. There has since been no diminution in the work ; on the contrary it has been increased by the addition of several new voluntary reporting stations, the returns from which have to be compiled in the central office, and also by the continued expansion of the forecast and storm signal service.

Being impressed with the importance of bringing the publication of the Annual Climatological Report nearer to date, I have employed some members of the staff to work at it at night in their own homes, and fairly satisfactory progress has been made. I hope before long to be able to publish a volume containing all the rainfall and snow-fall observations ever taken in Canada, together with normal values.

The number of publications received in the library during the year was 352 ; being for the most part annual, quarterly, monthly, weekly and daily reports and periodicals, from the principal astronomical and magnetical observatories of the world.

The Annual Climatological Reports for the years 1898 and 1899 were issued during this year, and 860 copies of each were widely distributed in the various countries. Eight hundred and thirty-nine copies of the Monthly Weather Review and 839 copies of the Toronto General Meteorological Register were also distributed to persons in Canada and the United States each month, and 90 copies of the Daily Weather Chart were distributed each day.

I would summarize the work of the central office as follows :—

The receiving by telegraph twice each day of the reports from 36 Canadian stations and also from an average of 60 United States stations furnished through the courtesy of the Chief of the U.S. Weather Bureau.

The preparation of synchronous daily meteorological charts on which to base the forecasts, also preparation of a stencil for duplicating this map and finally printing off 90 copies each day.

The issue of storm warnings to 69 signal display stations in various parts of the Dominion, and the issue of bi-daily forecasts for all parts of the Dominion lying between Assiniboia Territory and Cape Breton.

The checking over the weekly and monthly returns received from every Meteorological station in the Dominion, and in most instances adding up and meaning the columns of figures representing barometer and temperature readings, rainfall, humidity, &c.

The preparation of a monthly weather chart within three days of the close of each month ; the preparation of letter press and tables of mean monthly values of every

SESSIONAL PAPER No. 21

Meteorological reporting station in the Dominion, for the Monthly Weather Review ; the preparation of tables of monthly and annual mean values for an Annual Climatological Report, a quarto volume of nearly 400 pages.

Supplying instruments and apparatus, including barometers, thermometers, wind vanes and anemometers, rain gauges &c., also storm signals and lantern supplies as required to all Meteorological and Storm Signal Stations in the Dominion. All instruments are tested at the Central Office before being sent out and all stationery, forms and bulletin blanks are distributed from this office. All thermometer screens are put together in the Central Office work shop.

The Magnetic Observatory at Agincourt is kept in operation by the director of the Meteorological Service, assisted chiefly by Mr. Menzies and Mr. Young ; absolute determinations of the magnetic elements are made weekly.

A regular time service is in operation and time signals are sent out each day at 11.55 a.m.

Sunspots are charted each day when visible.

A Seismograph for registering earthquakes, whether felt or unfelt, is kept in operation ; the photographic paper on which record is obtained is developed at the Central Office, and measurements of seismic records obtained at both Toronto and Victoria, B.C., are made at Toronto ; results are tabulated and copies sent to the office of the Central Seismological Committee of the British Association.

All photographic records from the meteorological and magnetic instruments at Toronto and Agincourt are developed at the Central Office and results tabulated.

I would respectfully request that additional accommodation be provided for the staff in the Central Office. The officers and many of the 18 assistants are cramped for room in the performance of their duties, and beyond this, meteorological and climatic records are steadily accumulating, and it is even now a problem to find shelving for them. I would therefore suggest that the Main Observatory building have a story added to it, and that the tower be raised proportionately in order to preserve the architectural symmetry of the building.

The attention of the department is again respectfully drawn to the exceedingly low scale of salaries in the Meteorological Office, and I would respectfully point out that several of my assistants, men who are thoroughly good clerks and computers, are drawing salaries of less than \$ 00 per annum, which, since the cost of living in the cities has so materially increased is only enough to provide for the barest necessities of life.

TABLE II.—METEOROLOGICAL SERVICE—Number of Forecasts and percentage of fulfilment under each district, in each month and in the year, July, 1901, to end of June, 1902, inclusive.

2-3 EDWARD VII., A. 1903

MONTH.	MANITOBA.				LAKE SUPERIOR.				GEORGIAN BAY.				LOWER LAKE REGION.				OTTAWA VALLEY.			
	Verified.				Verified.				Verified.				Verified.				Verified.			
	Number of Forecasts.	Number fully.	Number partly.	Number not.	Percentage.	Number of Forecasts.	Number fully.	Number partly.	Number not.	Percentage.	Number of Forecasts.	Number fully.	Number partly.	Number not.	Percentage.	Number of Forecasts.	Number fully.	Number partly.	Number not.	Percentage.
1901.																				
July	84	56	19	9	78.0	114	83	19	12	81.1	127	93	19	15	80.7	128	101	22	5	87.5
August.....	96	87	6	3	93.8	117	100	15	2	91.9	128	107	15	6	89.5	130	110	16	4	90.8
September.....	91	72	10	9	84.6	106	84	16	6	86.8	111	100	5	6	92.3	111	98	6	7	91.0
October	102	88	6	8	89.2	116	81	26	9	81.0	129	104	15	10	86.4	129	109	14	6	89.9
November.....	81	63	13	5	85.8	121	103	11	7	89.7	115	97	12	6	89.6	115	101	9	5	91.7
December.	85	60	12	13	77.6	106	90	11	5	90.0	110	92	10	8	88.2	110	94	12	4	90.9
1902.																				
January	86	77	6	3	93.0	91	76	12	3	90.1	103	93	6	4	93.2	103	90	9	4	91.7
February....	83	60	16	7	81.9	89	71	15	3	88.2	105	88	12	5	89.5	105	94	8	3	93.3
March.....	87	71	9	7	86.8	95	72	11	12	81.6	98	80	12	6	87.8	99	83	10	6	88.9
April.....	88	60	19	9	79.0	103	90	10	3	92.2	113	92	11	10	86.3	117	101	7	9	89.3
May	82	70	10	2	91.5	110	86	15	9	85.0	105	78	21	6	84.3	105	87	14	4	89.5
June.....	87	66	18	3	86.2	111	73	27	11	77.9	123	100	17	6	88.2	123	102	20	1	91.0
Total.....	1,052	830	144	78	85.8	1,279	1009	188	82	86.2	1,367	1,124	185	88	88.9	1,375	1,170	147	58	90.4
																	1,003	158	88	96.6

TABLE II.—METEOROLOGICAL SERVICE—Number of Forecasts and percentage of Fulfilments in each District, in each Month and in the Year, July, 1901, to end June, 1902, inclusive.

Month.	UPPER ST. LAWRENCE VALLEY.			LOWER ST. LAWRENCE VALLEY.			GULF.			MARITIME PROVINCES WEST.			MARITIME PROVINCES —EAST.			TOTAL.		
	Verified.			Verified.			Verified.			Verified.			Verified.			Number of Forecasts.		
	Number fully.	Number partly.	Percentage.	Number fully.	Number partly.	Percentage.	Number fully.	Number partly.	Percentage.	Number fully.	Number partly.	Percentage.	Number fully.	Number partly.	Percentage.	Number fully.	Number partly.	Percentage.
1901.																		
July.....	114	90	78.6	17	87	85.3	88	18	9.8	117	87	15.8	84	16	19.7	1,141	861	175
August.....	106	86	9.8	15	86	85.3	96	10	5.9	111	90	8.6	88	15	8.6	1,125	935	126
September.....	103	92	7.7	11	85	6.8	89	7	6.9	107	91	6.8	88	13	6.8	1,043	891	92
October.....	122	98	7.7	15	97	4.9	96	18	2.9	122	105	1.9	104	13	3.9	1,193	974	164
November.....	106	83	8.8	18	79	8.8	85	16	1.8	108	87	10.8	84	15	10.8	1,078	862	141
December.....	96	83	9.1	8	89	5.9	82	15	5.7	110	90	9.8	89	12	9.8	1,027	852	109
1902.																		
January.....	99	86	9.9	8	83	5.9	93	12	4.9	120	102	3.9	104	12	1.9	1,027	887	99
February.....	100	87	9.1	8	87	8.9	80	13	10.8	107	91	8.8	89	13	11.8	1,002	830	107
March.....	97	78	8.6	12	83	11.8	77	16	10.8	112	84	14.8	82	17	13.8	1,003	785	123
April.....	101	79	8.3	15	80	10.8	75	15	13.8	103	81	7.8	83	13	8.8	1,036	819	128
May.....	104	76	8.2	18	77	6.8	76	22	8.2	115	86	8.3	83	21	12.8	1,048	793	183
June.....	107	81	8.3	14	83	5.8	85	16	4.9	111	85	7.8	83	20	7.8	1,086	844	182
Totals.....	1255	1019	79.8	157	1016	84.8	1022	178	8.6	1343	1079	96.8	1061	175	110.8	12,812	10,333	1,629
																		850

2-3 EDWARD VII., A. 1903

FORECASTS AND STORM SIGNALS.

The number of storm signal display stations in the Dominion is now 72, 38 of which are in Quebec and the maritime provinces, 31 on the Great Lakes and 3 in British Columbia. It is gratifying to be able to state that successful warning was given for all the more important storms which occurred during the year, the signals being duly displayed well in advance at all stations open to navigation. The heaviest of the gales were as follows:—

October 18, the Gulf of St. Lawrence; November 12, the Great Lakes to the Maritime Provinces; November 25, the St. Lawrence Valley and the Maritime Provinces; January 22, the Great Lakes to the Maritime Provinces; January 26, the Great Lakes and the St. Lawrence Valley and the Maritime Provinces; February 17, the St. Lawrence Valley and the Maritime Provinces. It is encouraging to note a few comments in regard to these warnings as follows:—

Halifax reporting on the gale of November 25, says:—‘The storm was exceptionally heavy, the warning was ample and several gentlemen have made kind remarks on the excellence of the service both as to the Daily Bulletin and the Storm Signals.’ Port Escuminac remarks of the same storm ‘It was a grand warning.’ In regard to the gale of December 4, the *St. John Daily Telegraph*, under date of December 5, has the following leader:—

VALUABLE METEOROLOGICAL SERVICE.

‘Year after year the value of the weather forecasts issued by the Dominion Meteorological Service becomes more apparent. While the forecasting of ordinary weather changes are of great utility, it is when violent storms are on the programme that a vital interest is taken, and the successful forecasting of such disturbance is the gauge by which the public measure the usefulness of the service. It would be difficult to estimate the value of property placed in jeopardy by one such storm as occurred yesterday, sweeping our coasts and bays, and it would be more difficult to estimate the amount of life and property saved by the warnings of our Canadian service. Warnings for the storm of yesterday were issued on the previous morning, and storm signals were displayed at all maritime ports. This is but one instance of the ability and alertness of our Canadian forecast officials.’

The *St. John Globe* also under date of February 28, 1902, says as follows:

‘In calling attention to the article in to-day’s *Globe* on Observatory Time, it may fairly be stated that with this useful service, in addition to the daily forecasts of the weather and warnings of approaching storms—which doubtless have been the means of saving much valuable life and property—the work of the Canadian Meteorological Service may truly be said to be of inestimable value to the country and fully alive to the needs of navigators.’

During the year, 1,522 warnings were issued from Toronto, and of these 1,278, or 84.0 per cent were verified.

The daily forecasts have been disseminated more widely than in previous years. The bulletin issued at 10 p.m., is distributed by the telegraph companies to almost every telegraph office in the Dominion, and published in nearly all the morning newspapers. The bulletin issued at 10 a.m., and which covers the current and following day, has also been widely disseminated and published in most of the afternoon papers, besides being posted in conspicuous places, especially at lake ports and seaports where vessel masters and sailors may conveniently see it. The more extensive bulletin which has been issued each morning for several years to St. John and Halifax, and was commenced in the spring of 1900, at Ottawa, Quebec, Montreal, Hamilton and London, continues to give satisfaction, and applications have been received from Canso, N. S., and Sydney, N. S., that the same information be supplied to those ports.

Application for special temperature forecasts from shippers of perishable goods continue to increase in Toronto and Montreal.

SESSIONAL PAPER No. 21

Forecasts for the lower portion of Vancouver Island and the lower mainland of British Columbia have been issued with regularity from Victoria, B. C., and I am pleased to be able to report that a fair degree of accuracy has been maintained.

INSPECTION OF STATIONS.

During the latter part of the summer of 1901, the director visited the various telegraph stations in the more western and northwestern portions of the Dominion including Dawson City, Yukon. At Port Arthur the Meteorological Station was as usual found in good order. Mr. Cook reported that the daily bulletins are posted outside his office and on the wharf, and that there has been a constantly increasing demand for the meteorological reports. At Medicine Hat the instruments were transferred from Mr. J. K. Drinnan to Mr. Walter Crosskill. This change of observer did not entail any change in the position of the thermometer screen or rain gauge, which still remains in an open space near the river. Mr. Crosskill is likely to prove a capital observer. Calgary, New Westminster, Kamloops, Edmonton, Swift Current, Prince Albert, Winnipeg and White River were visited in turn; where necessary the station barometer was cleaned; various minor alterations were made in the exposure of instruments, and observers instructed in such instances as errors had been noted.

At Banff a choice was made of a site for the new observing station on Sulphur Mountain peak, and a rough preliminary survey was made of the best route for the cable connecting the upper and lower stations. At the time it was thought probable that the trail would be completed early in October, and that the station might be equipped before winter but bad weather and various unforeseen delays prevented anything being done before the beginning of winter. However, the trail had been completed before the end of the financial year and work had been begun on the observatory building. In April, an order for three miles of cable was placed with the London Electric Wire Company, England, and I have to thank Professor Hugh Callendar, of University College, London, for valuable assistance and advice in connection with this matter.

The instruments to be placed at the mountain top and connected electrically with the lower station are a wind-vane and anemometer; a barograph and one thermograph being by M. Richard Frères, Paris, and the other thermograph by Professor Hugh Callendar. In addition to these instruments recording at a distance there will be a barograph and thermograph by M. Richard Frères, each of which will record automatically at the higher station.

Two days were spent at Victoria inspecting the new offices occupied by Mr. E. Baynes Reed and Mr. Denison; and in going over the work of these officers to whom has been deputed the work of furnishing forecast for British Columbia. Mr. Denison is, by means of a sensitive air barometer and tide gauge, investigating the connection between atmospheric waves and secondary undulations on tidal curves in the hope that something may be learnt which will be of practical value in determining the advance of storms from the Pacific.

Dawson City was visited, it being the intention to obtain telegraphic reports from this station just as soon as the telegraph should be opened to British Columbia. Mr. T. A. Stewart has proved a fairly satisfactory observer, but there is no suitable exposure for the thermometers in the neighbourhood of his house, and it has been necessary to place the screen and rain-gauge in anything but a satisfactory position. The telegraph line was opened through in December, and since that, a daily report has been received. The observing hour at Dawson corresponding to 8 o'clock morning and evening eastern standard time—the observing hours throughout America—are 3.43 a.m. and p.m. So far it has not been possible to arrange that the former observation be telegraphed until the opening of the telegraph office at 8 o'clock.

Twenty-one stations were inspected by B. C. Webber during the past summer, who reports as follows:—Barometers were cleaned and adjusted at nearly all the stations visited where barometers were in use. Thermometers were also tested and adjusted. At Depot Harbour a suitable site was chosen for the signal mast, arrangements made for its erection, and the agent instructed in the duties required.

2-3 EDWARD VII., A. 1903

At Renfrew, Mr. Ewing was instructed in the duties of observer. At Bissette the anemometer exposure has not proved as satisfactory as was anticipated, the lofty hills on either side in the immediate vicinity apparently affecting the surface winds. At Winnipeg the observing is relegated to the college students, a state of affairs not calculated to ensure good work. At Portage la Prairie, at the home for incurables, where the instruments are placed, a patient has been deputed to do the observing, consequently under existing conditions the work is valueless. At Qu'Appelle the new correction for the reduction of the barometer was being applied incorrectly, as had been surmised. At Prince Albert the station barometer was found to be badly leaking and hardly adjustable. Observer still affirms that there is very little wind at this place; the anemometer exposure is fair. The platform carrying the Battleford anemometer was very dilapidated and it has been replaced by a new one. At Edmonton, Mr. Taylor is still unable to attend to the work, and his daughter does the observing. The Calgary barometer was discovered to be badly cracked, and another one had to be substituted; the anemometer structure also required attention. At Banff the trail up Sulphur Mountain to the Observatory has been especially well constructed; it is six feet wide, and can be comfortably traversed on horseback. The thermometers at Golden were not well exposed, and observer seemed doubtful whether he would continue the work gratuitously. At Glacier the work is reluctantly attended to, the thermometer readings are taken from a 'Sixes' instrument suspended from railway station wall and the rain gauge which was under the eaves of a shed was pretty well to pieces. I have given my views in a previous report on the desirability of reliable observations from this point. At Nanaimo an anemometer is not advisable, the work here is conscientiously and well performed. The work at the head office for British Columbia under Mr. E. Baynes Reed continues to be very satisfactory. At Vancouver the time work is not well performed and a general overhauling is necessary. The voluntary observer (Mr. Brown) at this place takes great pains and interest in the weather observations. At Westminster all was in good order. Parry Sound was visited in order to instruct the observer in the new reduction table for the barometer to sea level, as it was found impossible to impart the knowledge by writing. The thermometers here are not well exposed and the rebuilding of the present much worn wind tower would be hardly advisable.

Six stations were inspected by Mr. H. V. Payne. At South West Point, Anticosti Island, the new observer, Mr. E. Lemieux, required full instructions in his work, and was doing his best to perform his duties. The instruments required a general overhauling. At Father Point the barometers required cleaning and anemograph was repaired. The signal lamps do not keep alight properly and jar out. The station on the whole was in good order. At Point Rich, Newfoundland, the instruments were well cared for, but a wind vane and sun-dial were required. At Point Amour, Labrador, instruments were in order and observations well taken; the observer was using magnetic instead of true bearing, in giving direction of wind. At Cape Norman, Newfoundland, a new wind vane was required and the sun-dial was out of level. Observations were fairly taken. At Belle Isle, Newfoundland, the barometer was too dirty to give correct reading and had to be replaced by a new one; the anemometer was broken and new arms were required; the sun-dial was readjusted. A steel tower was recommended for the wind instruments as the old exposure was not satisfactory. Cape Race, Newfoundland, was also visited, it was found well adapted as an observing station, and the keeper was willing to take observations if instruments were supplied.

SEISMOLOGICAL OBSERVATIONS.

The Milne seismographs at Toronto and Victoria, B.C., have been kept in regular operation throughout the year and very satisfactory records obtained. The disturbances have all been tabulated, and copies of all tables together with photographic prints of the more important disturbances have been forwarded to Professor Milne, secretary of the Seismological Committee of the British Association. For the purpose of seismological investigation these will afford very valuable and interesting data when considered

SESSIONAL PAPER No. 21

with similar curves from other parts of the world. We have received very favourable comments from Professor Milne as to the excellent nature of the observations supplied from the two Canadian stations.

From June, 1901, to June, 1902, 106 disturbances have been recorded at Victoria and 82 at Toronto. The principal ones of the series occurred on—

- August 9th.
- October 8th.
- November 14th—20th.
- December 9th—31st.
- January 1st—24th, 1902.
- February 17th.
- March 22nd.
- April 19th.

The disturbances of August 9 originated in Japan and the swing of the Victoria pendulum was 30 millimetres. The preliminary tremors travelled in six minutes between Victoria and Toronto. Coincident with the earthquake in Japan came a tidal wave which swept in on the Hawaiian coast. It attained a height of 5 feet greater than the usual high water mark. The disturbance of April 19th was particularly marked. The Toronto record shows the vibration to have passed completely across the ribbon of photographic paper, indicating a swing of over 25 millimeters, the Victoria pendulum swinging 16 millimeters and the magnets at the Agincourt Observatory were set in vibration by the earth billows. This earthquake was central in Guatemala and resulted in large loss of life and property. Quesaltenango the second city of importance in Guatemala and having a population of 15,000 was reduced to ruins and 500 lives were lost.

TIME SERVICE.

During the year ending June 30, 1902, sixty meridian observations for time were made with the transit instrument and five solar observations were taken. The positions of the stars used were those given in the 'Berliner Jahrbuch.' The usual determinations of the collimation error of the transit instrument have been made by micrometrical measurements of the collimating telescope and by reversals on Polaris. The azimuth level and collimation errors have remained very steady throughout the year giving a convincing proof of the substantial mounting of the transit instrument.

	Toronto.	Montreal.	Quebec.	St. John.
1901.	"	"	"	"
July 12.....	0.00	0.00	+ 0.27	+ 1.13
" 26.....	+ 0.36	— 0.36	+ 0.74	+ 1.22
Aug. 16.....	— 0.12	+ 0.12	— 0.04	+ 1.05
Sept. 6.....	+ 0.28	— 0.28	+ 0.24	+ 0.44
" 20.....	— 0.20	+ 0.20	+ 0.33	+ 0.94
Oct. 4.....	+ 0.26	— 0.26	+ 0.21	+ 0.48
" 18.....	+ 0.13	— 0.13	+ 0.28	+ 1.28
Nov. 15.....	+ 0.18	— 0.18	+ 3.97	+ 1.05
" 29.....	— 0.38	+ 0.38	+ 0.04	— 0.13
Dec. 13.....			+ 0.88	+ 0.69
1902.				
Jan. 10.....			+ 0.69	
" 31.....	— 0.18	+ 0.18	— 0.48	+ 1.17
Feb. 14.....	— 0.12	+ 0.12	— 0.68	+ 1.32
Mar. 7.....	+ 0.16	— 0.16	— 0.23	+ 0.85
" 21.....	+ 0.06	— 0.06	+ 0.23	+ 1.00
Apr. 11.....	+ 0.09	— 0.09	+ 0.36	+ 1.05
" 25.....	— 0.02	+ 0.02	+ 0.36	+ 0.57
May 16.....	+ 0.05	— 0.05	+ 0.02	
" 30.....	+ 0.04	— 0.04	— 0.84	+ 0.03
June 18.....	— 0.29	+ 0.29	— 1.28	+ 0.10

The time exchanges with Montreal, Quebec and St. John have all been registered on the chronograph at Toronto. The errors of the Toronto clock and of time on the time-pieces used by the different observatories elsewhere are computed from the latest observations. The mean time clock of the Toronto Observatory has continued to show absolute standard time of the 75th meridian. The means of keeping it to this adjustment has been described in the Annual Report for 1899. The different electrical attachments to this clock and the sidereal clock have given great satisfaction. Time has been given weekly to the Magnetical Observatory at Agincourt. The time service under control of the Meteorological Service comprises in addition to the striking of the fire alarm bells in Toronto at 11.55 a.m. daily, the dropping of the time balls at Quebec and St. John and the firing of a gun at Vancouver. The following table shows the difference between the time by 'Standard Observer' and that given at the various exchanges. The sign indicates that the time as sent from the various observatories is faster than by 'Standard Observer.' The arithmetical means of the times determined at Toronto and Montreal is the time by 'Standard Observer.' There can be little doubt that the constant positive difference between 'Standard Observer' and St. John, indicates that we are using an erroneous longitude for that city and that no fault lies with the observer. It is proposed very shortly, as soon as a new transit instrument shall have been installed, to redetermine its longitude.

SUNSPOT OBSERVATIONS.

Sunspot observations have been continued as usual throughout the year. These observations are made by projecting the image of the sun upon paper, the equatorial telescope driven by clock-work being used. Maps of the sun's surface are thus made about four inches in diameter showing well the spots and faculæ markings. One hundred and thirty-eight observations were made, and on one hundred and fourteen days the sun was observed with no spots. The periods of no sunspots were as follows:—

1901—June 29 to July 22.....	23 days.
“ July 25 to October 3.....	71 “
“ October 14 to October 26.....	12 “
“ November 26 to January 3.....	38 “
1902—January 15 to March 1.....	46 “
“ March 14 to May 22.....	70 “
“ June 4 to June 30.....	27 “

From November 26 a most decided sunspot minimum occurred.
All of which is respectfully submitted.

I have the honour to be, sir,
Your obedient servant,

R. F. STUPART,
Director.

SESSIONAL PAPER No. 21

APPENDIX A.

QUEBEC, August, 1902.

To the Director,
Meteorological Service,
Toronto.

SIR,—I have the honour to transmit my annual report for the fiscal year ending June 30, 1902.

The correct standard time was given daily as formerly, and several chronometers were rated at this observatory during the navigation season.

The time-ball was dropped for the first time this year on April 10, and it is in good working order.

The weather bulletin has been regularly distributed and frequent inquiries respecting the probable state of the weather were made at this observatory, especially during the summer season.

All the meteorological observations were taken daily as heretofore.

I have the honour to be, sir,
Your obedient servant,

(Sgd) ARTHUR SMITH,
Director.

APPENDIX B.

ST. JOHN OBSERVATORY,
ST. JOHN, N.B., October 10, 1902.

R. F. STUPART, Esq.,
Director Canadian Meteorological Service,
Toronto, Ont.

SIR,—I have the honour to present the annual report upon the work of the St. John Observatory for the fiscal year ending June 30, 1902.

The meteorological work has been continued with but little change from former reports. A tipping bucket rain-gauge and electric register was received in August and at once installed, the first automatic record was made on the 15th of that month. Continuous records of the time, amount and rate of rainfall are now electrically registered by this instrument.

The morning weather bulletins from Toronto are of increasing value and importance to mariners, shippers and others having business interests that are affected by weather changes. The bulletin is issued as rapidly as possible after receipt of the telegraph message is posted, distributed and published by all of our daily papers as formerly reported. Special telephone reports are frequently requested, and in this way the forecasts and prevailing conditions over the greater portion of the continent are immediately available before the bulletin can be issued.

The morning forecasts and all storm warnings are promptly telephoned to St. Martins, the forecasts are posted in the telephone exchange and the storm signals

2-3 EDWARD VII., A. 1903

displayed at the lighthouse near the entrance to that port for the use of local mariners, as well as the shipping in that portion of the Bay of Fundy. A considerable portion of my time is taken up in answering inquiries from the press and public, and numerous demands are made for information from the observatory records.

The time service has received careful attention and observations of stars for determination of the errors and rates of the standard sidereal clock were made as often as the weather would permit. Owing to the adoption of standard time of the 60th meridian the time-ball has been dropped by that standard since of June 15, last, and the mean-time transmitting clock since the above date has been adjusted to show standard time on the 60th meridian.

Both clocks have been giving satisfactory service and the automatic system of clock signals which are daily telegraphed over the greater portion of the Maritime Provinces are practically used as the standard for this portion of the Dominion. Special time signals are quite frequently asked for from navigators and others.

I have the honour to be, sir,
Your obedient servant,

D. L. HUTCHINSON,
Director St. John Observatory.

MAGNETIC OBSERVATORY.

Lieut.-Colonel F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit the following report in connection with the Magnetic Observatory at Agincourt.

Photographic records of declination and horizontal force have been continued throughout the year, also thermographic records of the temperature of the basement. Hourly measurements of these curves have been tabulated showing hourly, daily and monthly means, also daily maxima and minima and times of the occurrence of the same. Check observations to these curves have been taken at stated times by means of auxiliary scale readings, and comparisons made. Daily comparisons of the clock regulating the time intervals of the curves have been made with a chronometer, and the daily rate and error recorded. A weekly telegraphic time exchange with Toronto has shown satisfactory rates.

The absolute determinations of declination, inclination and horizontal force have been carried on and comparisons made, by simultaneous readings with the differential instruments for constancy of zeros. Tabular information has at various times been compiled for those requesting the same.

About fifty hours of the photographic records have been missed through the stoppage of the driving clock and failure of coal-oil lights. The principal loss has been through stoppage of the clock. This clock has been doing continuous duty for more than fifty years and therefore is somewhat worn. The loss of record from this cause is approximately 0.5 per cent per annum.

Continuous records of velocity and direction of wind by electrical anemograph; a daily record of maximum and minimum temperatures; three incidental observations for temperature, state of weather, &c, and the amount of precipitation have been maintained throughout the year.

SESSIONAL PAPER No. 21

SYNOPSIS OF MAGNETIC CONDITIONS.

July.—A considerable disturbance set in at 20 o'clock of the 11th, continuing to 2 o'clock of the 13th, showing amplitude of 19 minutes for Declination and 30 millimetres for Horizontal force. The magnets were lightly disturbed from 16th to 22nd. The generality of days exhibited small uneasy movements.

August.—A disturbance of some magnitude occurred from 2 o'clock of 14th to 21 o'clock of 16th. Amplitudes 31 minutes and 23 millimetres respectively for Declination and Force. With exception of small movement on afternoon of 31st and the before mentioned disturbance, the month was comparatively quiet.

September.—A disturbance which commenced at 6 o'clock on the 9th continued until 20 o'clock of 11th showing some sharp movements. Amplitudes 37 minutes and 18 millimetres. The balance of the month was quiet with the exception of small movements from 9 o'clock of 16th to midnight of 17th.

October.—A medium disturbance from 0 o'clock of 8th to 7 o'clock of 9th showed amplitudes of 29 minutes and 18 millimetres; slightly disturbed from 22 o'clock of 12th to 22 o'clock of 13th, with continuous uneasiness to 23 o'clock of 16th. Uneasy and disturbed from 4 o'clock of 24th to midnight of 25th.

November.—Lightly disturbed from 11 o'clock of 3rd to midnight of 5th. Uneasy movements at intervals from 7th to 11th inclusive. A small disturbance from 2 o'clock of 19th continued 24 hours. Balance of month quiet.

December.—A small disturbance from 22 o'clock of 1st to 21 o'clock of 2nd. Uneasy movements from 7th to 9th. A disturbance from 11 o'clock of 27th to 20 o'clock of 28th, showed amplitudes of 16 minutes and 24 millimetres. Uneasy on 29th.

January.—Uneasy 2nd to 4th inclusive. Disturbance from 8 o'clock of 15th to 20 o'clock of 17th, 27 minutes and 20 millimetres. Uneasy 24th and 25th.

February.—Disturbed and uneasy from 0 o'clock of 7th to noon of 12th and continued unrest to midnight of 16th. Disturbed from 5 o'clock of 20th to noon of 21st and from noon of 24th to 9 o'clock of 26th. This month was the most continuously perturbed of the year but with small movements.

March.—Uneasy during afternoon of 5th and 6th and morning of 8th. Disturbed from noon of 11th to 4 o'clock of 12th showing sharp decrease of Force at 16h.10m o'clock. Uneasy afternoon of 17th. Disturbed from 9 o'clock of 22nd to 23 o'clock of 24th remaining continuously uneasy to 4 o'clock of 26th.

April.—Continuous state of unrest from 1st to 4th. Uneasy 8th and 9th continuing to midnight of 11th, the largest movement occurring from 20 o'clock of 10th to 11 o'clock of 11th. Amplitudes of 56 minutes and 55 millimetres respectively of Declination and H Force. (Guatamala earthquake was shown on traces of 18th more markedly on Bifilar curve, it being very quiet.) Magnets were uneasy and disturbed from 20 o'clock of 20th to midnight of 23rd.

May.—Disturbance set in at 7 o'clock of the 8th and continued to midnight of 9th. Amplitudes of 31 minutes and 32 millimetres. Uneasy during the afternoons from 20th to 31st.

June.—Uneasy afternoon of 5th, 6th and 7th. Small disturbances of afternoons of 9th and 10th. Uneasy 11th to 19th. Light disturbances on 2 to 19 o'clock of 22nd. Uneasy on afternoons of days from 24th to 30th. This month exhibited state of restlessness during hours from noon to midnight of most days.

I have the honour to be, sir,
Your obedient servant,

R. F. STUPART,
Director.

2-3 EDWARD VII., A. 1903

APPENDIX No. 5.

SIGNAL SERVICE, CANADA.

OFFICE OF THE SUPERINTENDENT,
QUEBEC, October 15, 1902.

Lieut.-Colonel F. GOURDEAU,
Deputy Minister Marine and Fisheries,
Ottawa.

SIR,—I have the honour to forward herewith the annual report for the signal service for the year ending June 30, 1902.

I have the honour to be, sir,
Your obedient servant,

J. U. GREGORY,
Agent, Department of Marine and Fisheries.

SIGNAL SERVICE.

QUEBEC, October 15, 1902.

As in preceding seasons, reports have been received from the stations in the lower part of the river and gulf, recording the weather, wind, condition, location and movement of the ice during the winter and spring months, and during the season of navigation all inward and outward bound vessels as signalled when passing each station, including the Straits of Belle Isle.

From the 1st to the 20th of April, three reports per week were obtained and forwarded to the Boards of Trade, Montreal, St. John, N.B., and Quebec, and to the Chamber of Commerce, Halifax, N.S., also to the press of Montreal and Quebec, to the agent of the department, Quebec, to the custom-house and immigration agent, to the agents of steamship lines, tug owners, to the pilots for below and above Quebec, also to Messrs. Henry Fry & Co., Lloyds agents, Quebec.

From April 21 reports were received daily and forwarded as above.

The Chief Superintendent of the Quarantine station at Grosse Isle is also supplied with full information as to the weather, wind, and the incoming of all transatlantic or foreign vessels.

Information was supplied from the bureau here as in past seasons, to the agents at Anticosti, Magdalen Islands, Meat Cove, C.B., Cape Ray and Cape Race, Newfoundland, from April 13 as to weather, wind, movement and condition of the ice in the Gulf and River St. Lawrence up to Montreal, for the guidance of any vessel calling for information.

The Quarantine doctor at Rimouski is also supplied with a report of the incoming mail steamers, name of station and hour of passing being given when vessel was first signalled.

Information as to wind, weather and ice in the vicinity of Anticosti, Magdalen Islands, Meat Cove, St. Paul's Island and Cape Ray, Newfoundland, is also sent to Pointe aux Esquimaux in March for the guidance of the sealing fleet.

SESSIONAL PAPER No. 21

All reports received of inward bound vessels were repeated to the pilot station at Father Point, so that pilots could be promptly advised of the locality of inward bound vessels.

NAVIGATION—PORT OF QUEBEC.

LAST OUTWARD BOUND VESSELS—1901.

November 17, 1901.—The last Royal Mail steamer, the SS. *Corinthian* sailed on this date.

November 27, 1901.—The SS. *Mexican*, SS. *Laconia* and the SS. *Banana* sailed on this date.

December 2, 1902.—The SS. *Alf* and the SS. *Agnar* sailed on this date, last steamers to leave.

FIRST INWARD BOUND VESSELS—1902.

April 13, 1902.—The SS. *Fremona* arrived on this date ; first steamer to arrive.

April 17, 1902.—The SS. *Alderney* arrived on this date.

April 19, 1902.—The SS. *Mora* arrived on this date.

April 29, 1902.—The SS. *Jacona* arrived on this date.

April 26, 1902.—The Royal Mail steamer *Parisian* arrived on this date : first mail steamer to arrive.

I have the honour to be, sir,

Your obedient servant,

J. U. GREGORY,
Agent, Department of Marine and Fisheries.

APPENDIX A.

Report on ice &c., in the Straits of Belle Isle and Coast of Newfoundland, as noted by the Agents of the Department at Belle Isle, Cape Bauld, Cape Norman and Point Amour.

BELLE ISLE.

December, 1901.—No ice was seen this month, very mild weather and strong north-west and west winds prevailed.

January, 1902.—Vessels could have navigated the straits without difficulty ; very little ice made its appearance, north and north-west winds mostly prevailing.

February, 1902.—The first week of this month was very cold, and some heavy sheet ice made its appearance. The balance of the month was very mild and very little ice was seen. North and north-east winds mostly prevailed.

March, 1902.—The first part of this month, vessels could have passed through the straits without difficulty, the weather was rather mild. The latter part of the month the straits filled with heavy northern ice, gales of north and north-east winds prevailed.

April, 1902.—The straits were blocked with heavy ice until about the 25th of the month, then strong gales of west wind cleared the straits entirely, and from that date on, there was no ice to impede navigation.

2-3 EDWARD VII., A. 1903

CAPE BAULD, NEWFOUNDLAND.

As stated in previous reports, the distance from Belle Isle being but 14 miles, the observations as to wind, weather &c., vary but little with the latter place.

December 14, 1901.—First slob ice made its appearance, hardly any ice was seen this month and no snow fell.

January, 1902.—Very little ice was seen in the first half of this month, the weather being very mild, the latter part being rather cold.

April, 1902.—Several sealing steamers were seen this month and also some schooners.

CAPE NORMAN, NEWFOUNDLAND.

October, 1901.—First snow fell on the 19th instant; snow fell on three occasions this month; about 4 icebergs seen daily.

November, 1901.—Snow fell on four occasions this month, and about 4 icebergs were seen daily.

December 7, 1901.—First ice made its appearance on this date; snow fell on several occasions; about 5 icebergs seen daily.

January, 1902.—From the 10th to the end of the month, snow fell almost daily in very large quantities; about two icebergs were seen daily.

March, 1902.—No snow fell this month; very fine weather prevailed, close packed ice everywhere, about 9 icebergs seen daily.

POINT AMOUR.

January 5, 1902.—Some small strings of slob ice made its appearance on this date, first seen.

January 11, 1902.—Straits clear, no ice to be seen.

January 27, 1902.—Straits full of light open ice, no difficulty for vessels to pass through.

February, 1902.—From the 1st to the 10th of this month the strait was full of pan ice, from six to eight inches thick; from the 15th to the end of the month the ice was all broken up, and vessels could have passed through without much difficulty.

March, 1902.—The strait was full of heavy close packed ice the most of the month; from the 15th to the end of the month, about 15 icebergs were seen daily. On the 15th the sealing steamer *Algerine* passed outward. On the 19th the sealing steamer *Panther* past outward jammed in the ice. On the 22nd the sealing steamer *Newfoundland* passed inward. On the 23rd a schooner passed here jammed in the ice.

SESSIONAL PAPER No. 21

APPENDIX B.

Thermometer readings at Belle Isle from December, 1901, to April, 1902.

Date.	December, 1901.			January, 1902.			February, 1902.			March, 1902.			April, 1902.		
	9 a.m.			Noon.			6 p.m.			9 a.m.			Noon.		
	6 p.m.	9 a.m.	Noon.	6 p.m.	9 a.m.	Noon.	6 p.m.	9 a.m.	Noon.	6 p.m.	9 a.m.	Noon.	6 p.m.	9 a.m.	Noon.
1.	26	24	20	25	20	26	5	4	5	24	20	32	29	28	32
2.	13	15	18	25	26	24	0	4	0	32	32	30	32	28	31
3.	17	16	18	24	20	22	26	15	26	25	30	25	30	32	30
4.	18	20	22	22	22	20	32	30	32	31	32	30	30	23	18
5.	20	18	18	15	18	16	33	32	35	30	31	27	10	12	12
6.	13	16	18	6	10	5	31	34	35	10	16	5	32	10	10
7.	7	10	15	12	7	15	30	34	33	3	8	10	26	13	20
8.	20	22	20	18	16	16	33	32	34	15	15	12	20	20	21
9.	20	26	28	20	18	20	31	33	31	8	3	27	31	20	25
10.	26	29	34	22	20	24	36	31	36	13	10	15	20	20	27
11.	15	18	10	26	20	25	30	30	30	20	16	24	29	29	29
12.	8	15	15	36	22	32	27	29	32	32	34	31	35	26	32
13.	21	26	26	31	30	27	21	22	26	24	26	18	34	30	31
14.	30	32	30	20	24	10	30	23	25	15	10	15	34	31	30
15.	29	30	32	5	9	4	27	27	27	18	15	16	35	31	32
16.	32	34	34	10	4	10	16	15	16	32	20	27	36	27	31
17.	20	21	18	20	15	10	18	10	18	25	26	25	36	31	32
18.	21	18	18	5	0	10	26	22	26	34	32	34	33	32	31
19.	16	20	14	21	13	0	32	32	32	36	32	34	33	25	30
20.	13	15	10	77	70	5	30	30	28	36	34	36	32	31	30
21.	10	16	8	22	16	24	12	13	12	34	32	36	37	30	31
22.	3	2	10	20	18	20	15	10	15	25	31	34	34	30	32
23.	17	19	22	24	22	33	16	12	20	32	30	36	34	31	31
24.	22	25	30	33	35	30	13	10	15	30	29	30	36	32	31
25.	32	32	31	10	16	5	16	13	19	28	25	30	38	31	30
26.	20	19	17	4	3	8	22	11	20	30	36	31	34	24	25
27.	19	22	21	20	15	24	33	30	35	32	26	30	30	24	30
28.	14	18	26	5	18	7	16	20	18	31	23	30	31	29	31
29.	20	25	26	4	7	0	18	20	35	35	23	30	39	30	31
30.	26	28	24	0	6	5	22	22	13	32	21	31	33	29	27
31.	20	24	22	19	13	5	16	22	18	30	22	30	33	22	27

NOTE. - The figures that are in italic denote below zero.

2-3 EDWARD VII., A. 1903

PORT OF HALIFAX, N.S.,

PARTICULARS of Vessels Signalled during

YEAR AND MONTH.	ENGLISH MEN-OF-WAR AND TROOPERS.			FOREIGN MEN-OF-WAR.			STEAMERS, 1ST CLASS.			STEAMERS, 2ND CLASS.		
	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.
1901.												
July	1	1	0	1	1	0	34	31	3	77	74	3
August	9	9	0	1	1	0	21	17	4	81	74	7
September	7	7	0	1	1	0	18	15	3	53	51	2
October	6	6	0	0	0	0	21	19	2	59	56	3
November	2	2	0	0	0	0	24	23	1	66	63	3
December	0	0	0	0	0	0	41	37	4	46	42	4
1902.												
January	2	2	0	0	0	0	24	24	0	56	48	8
February	0	0	0	0	0	0	32	30	2	36	34	2
March	1	1	0	0	0	0	30	26	4	46	45	1
April	5	5	0	0	0	0	39	35	4	48	45	3
May	2	2	0	1	1	1	30	27	3	47	44	3
June	1	1	0	0	0	0	33	29	4	57	52	5
Totals	36	36	0	4	4	0	347	313	34	672	628	44

SESSIONAL PAPER No. 21

SIGNAL SERVICE.

the Year ending June 30, 1902.

SHIPS.			BARQUES.			BARQUEN- TINES.			BRIGS.			BRIGAN- TINES.			SCHOONERS, 3-MASTED OR WEARING PRI- VATE SIGNALS.			MONTHLY TOTALS.		
Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.
0	0	0	8	8	0	2	2	0	3	3	0	0	0	0	8	8	0	134	128	6
0	0	0	3	3	0	3	3	0	3	3	0	0	0	0	8	8	0	129	118	11
0	0	0	3	3	0	0	0	0	2	2	0	0	0	0	5	5	0	89	84	5
0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	13	12	1	101	95	6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	95	91	4
0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	2	0	90	82	8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	83	75	8
0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	70	65	5
0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	79	73	6
0	0	0	3	3	0	2	1	1	0	0	0	0	0	0	0	0	0	97	89	8
0	0	0	2	2	0	1	1	0	1	1	0	0	0	0	3	3	0	87	81	6
0	0	0	5	5	0	2	2	0	0	0	0	0	0	0	2	2	0	100	91	9
0	0	0	26	26	0	11	10	1	9	9	0	2	1	1	47	45	2	1154	1072	82

(Sgd.)

R. E. MACRORY, Lieut., R. E.
Superintendent of Signals.

2-3 EDWARD VII., A. 1903

APPENDIX No. 6.

LIVE STOCK SHIPMENTS.

Record of Live Stock shipped from Port of Montreal during the Month of May, 1902.

Number.	Date.	Steamer.	Destination.	SHEEP.		CATTLE.				HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Number of Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.	Fees Collected.	Shipped.	Lost.	Shipped.	Lost.		
	1902.									\$ cts.				Lbs.	Lbs.	
1	April 30.	Roman	Liverpool..	178				695								25
2	May 1.	Tremona	London...					92								4
3	" 4.	Montevidean.	"					242								10
4	" 4.	Memnon	Bristol.	39				301								12
5	" 6.	Manr. Commeret	Manchester.					330								14
6	" 8.	Sarnatian	Glasgow...	42				242			17					11
7	" 10.	Montcalm	Bristol...					350								14
8	" 10.	Yoruba	London...					197								8
9	" 11.	Manxman	Liverpool..					518								21
10	" 12.	Marina	Glasgow					238			17					11
11	" 13.	Cervona	London...					396			13					17
12	" 14.	Livonian	Liverpool & Glasgow.				(335)	463			36					21
13	" 15.	Manr. City	Manchester.				(128)	627								24
14	" 17.	Brazilian	London...					461								18
15	" 17.	Pretovian	Liverpool..					482								19
16	" 17.	Lakonia	Glasgow...	156				249			58					13
17	" 18.	Montfort	Bristol					350								14
18	" 18.	Bellona	Newcastle					275								11
19	" 18.	Inkerman	London...					523								21
20	" 20.	Lycia	"					300								12
21	" 22.	Lake Champlain	Liverpool..					339								14
22	" 23.	Rosarian	London...					429								17
23	" 24.	Kastalia	Glasgow...	15				295								12
24	" 24.	Kildona	London.					297								12
25	" 25.	Loango	Bristol					180								6
26	" 25.	Escalona	Newcastle.					160								19
27	" 29.	Lake Ontario	Liverpool..					456								

	29	Pomeranian	Glasgow	302	17	2,685,110	748,715	415
28	30	Alcides	"	301	158			
29		Total for May		10,090				
36		Same date, 1901		11,332	292			
31		" 1900		11,426	727			
36		" 1899		12,983	674			
46		" 1898		15,563	1,669			

POPE & MORGAN,
Inspectors.

MONTRÉAL, May 31, 1902.

2-3 EDWARD VII., A. 1903

RECORD of Live Stock shipped from Port of Montreal during Month of July, 1902.

Number.	Date.	Steamer.	SHEEP.		CATTLE.			Fees Collected.	HORSES.		SWINE.		Grain for Feed.	Number of Men.	
			Shipped.	Lost.	Fat.	Stockers.	Total.		Lost.	Shipped.	Lost.	Shipped.			Lost.
1902.															
60	July 3.	Lake Ontario			Liverpool		438							18	
61	" 4.	Lycia			Bristol		300							12	
62	" 4.	Pomeranian	48		London.		51							2	
63	" 3.	Kastalia			Glasgow.		265			19				12	
64	" 4.	Milwaukee	1,838		London.		241							15	
65	" 4.	Rosarian			Glasgow		303							12	
66	" 5.	Roman	690		Liverpool		702			1				31	
67	" 6.	Kildona.	664		London.		218							12	
68	" 9.	Norwegian	747		Glasgow		305							16	
69	" 10.	Lake Erie.			Liverpool		312							12	
70	" 10.	Aleides.			Glasgow.		301			17				13	
71	" 11.	Melville	230		Bristol		318							13	
72	" 13.	Hurona.	1,059		London.		131							10	
73	" 13.	Mongolian			Liverpool		222							9	
74	" 17.	Manchester Importer.			Manchester.		464							19	
75	" 16.	Sarmatian			Glasgow.		300							12	
76	" 17.	Lake Manitoban			Liverpool		400							16	
77	" 17.	Tritonian.	165		Glasgow.		295			15				13	
78	" 20.	Manxman			Liverpool		518							21	
79	" 20.	Iona.	919		London.		197							12	
80	" 23.	Oreadian.			Glasgow.		301							3	
81	" 24.	Montevidean.			London.		77							13	
82	" 24.	Concordia	276		Glasgow		306							18	
83	" 24.	Manchester Commerce.			Manchester.		451								
84	" 26.	Pretorian.			Liverpool		426								
85	" 26.	Montezuma			London.		586								
86	" 26.	Fremona	1,661		"		347								
87	" 26.	Monterey.	149		Bristol		350								
88	" 30.	Sicilian			Glasgow		301			21					
89	" 31.	Marina			"		303			3					
90	" 31.	Lake Champlain			Liverpool		560								
Total for July.			8,446				10,289			76			3,078,325	454	

SESSIONAL PAPER No. 21

	Previously reported.....	8,277	.....	.....	20,243	.....	237	.....	6,041,885	1,494,646	859
	Total to date.	16,723	.....	.....	30,539	.....	313	.....	9,120,210	2,194,332	1,313
98	Same date, 1901	25,781	.....	.....	32,742	.....	718	.....	.....	.....	.....
103	" 1900	13,259	.....	.....	39,812	.....	1,651	.....	.....	.....	.....
111	" 1899	19,393	.....	.....	43,526	.....	2,353	.....	.....	.....	.....
132	" 1898	7,993	.....	.....	44,885	.....	3,665	.....	.....	.....	.....

POPE & MORGAN,
Inspectors.

MONTREAL, July 31, 1902

2-3 EDWARD VII., A. 1903

Record of Live Stock shipped from Port of Montreal during Month of August, 1902.

Number.	Date.	Steamer.	Destination.	SHEEP.		CATTLE.			Fees Collected.	HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Number of Men.
				Shipped.	Lost.	Rate.	Stockers.	Total.		Shipped.	Lost.	Shipped.	Lost.			
	1902.								% cts.					Lbs.	Lbs.	
91	Aug. 1.	Montfort.	Bristol					360								15
92	" 2.	Numidian	Liverpool.					213								9
93	" 2.	Brazilian.	London.					275								11
94	" 2.	Devona	"	307				500								21
95	" 3.	Montreal.	"	850				551								28
96	" 6.	Ontarian.	Glasgow					306		18						14
97	" 7.	Lake Ontario.	Liverpool.					430								13
98	" 7.	Manchester City	Manchester.					830								33
99	" 8.	Memnon.	Bristol					300								12
100	" 8.	Cervona	London.	89				512								21
101	" 9.	Pomeranian	"					287								12
102	" 9.	Lakonia.	Glasgow					303								12
103	" 9.	Roman.	Liverpool.	678				701		1						32
104	" 13.	Rosarian	Glasgow					303								12
105	" 14.	Lake Erie	Liverpool.					350								15
106	" 14.	Alcides	Glasgow					308								12
107	" 16.	Potomac.	London.					340								14
108	" 16.	Montcalm	Bristol					350		14						14
109	" 16.	Lycia	London.	350				269								12
110	" 16.	Mongolian	Liverpool.					233								10
111	" 17.	Kildonia	London.	287				263								12
112	" 20.	Sarmatian	Glasgow					303								12
113	" 21.	Kastalia.	"	36				301								12
114	" 22.	Manchester Importer.	Manchester.	408				484								20
115	" 22.	Hurona	London.	604				423								20
116	" 24.	Milwaukee.	"	924				507								24
117	" 24.	Maxman.	Liverpool.					519								21
118	" 27.	Orcadian	Glasgow.					298								12
119	" 28.	Tritonia.	"					301								12
120	" 29.	Iona	London.					495								20
121	" 29.	Melville.	Bristol					340								14
122	" 30.	Corinthian.	Liverpool.					548								22
123	" 31.	Montevidean.	London.					315		8						13

SESSIONAL PAPER No. 21

	For the month	Previously reported	Total for season to date	1901	1900	1899	1898	1901	1900	1899	1898	1901	1900	1899	1898
121	4,553	16,723	21,256	12,808	30,532	43,340	11	313	3,713,836	740,610	2,194,332	1,313	536	1,313	536
121	31,387	16,395	30,810	15,239	56,498	56,240	848	2,242	9,114,210	2,934,942	1,849	2,000	2,000	2,000	2,000
121	14,110			59,580			4,312								

POPE & MORGAN,
Inspectors.

MONTREAL, August 31, 1902.

SESSIONAL PAPER No. 21

[illegible]

POPE & MORGAN,
Inspectors.

MONTREAL, September 30, 1902.

2-3 EDWARD VII., A. 1903

Record of Live Stock shipped from Port of Montreal during the Month of October, 1902.

Number.	Date.	Steamer.	SHEEP.			CATTLE.			HORSES.		SWINE.		Grain for Feed.	Lbs.	Hay for Feed.	Lbs.	Number of Men.
			Shipped.	Lost.	Fat.	Stockers.	Total.	Fees collected.	Shipped.	Lost.	Shipped.	Lost.					
	1902.							% cts.									
157	Oct. 1.	Arcadian.....					298										13
158	" 2.	Kastalia.....					305										12
159	" 4.	Corinthian.....					542										22
160	" 5.	Iona.....	1,043				384										20
161	" 7.	Montevideoan.....					240										10
162	" 8.	Sicilian.....	67				254										10
163	" 9.	Lake Champlain.....					523										21
164	" 10.	Milwaukee.....	1,987				430										25
165	" 11.	Pretorian.....					426										17
166	" 11.	Tritonia.....	165				292										12
167	" 11.	Manchester Commerce.....					359										14
168	" 11.	Ottoman.....	949				769										37
169	" 14.	Fremona.....					443										18
170	" 16.	Monteagle.....	153				250										11
171	" 16.	Lake Ontario.....					333										13
172	" 16.	Marina.....					300										13
173	" 18.	Roman.....	1,146				701										33
174	" 19.	Montfort.....	355				202										10
175	" 23.	Sardinian.....					228										9
176	" 23.	Manchester City.....					671										27
177	" 23.	Lake Erie.....					310										13
178	" 24.	Virginian.....	808				572										25
179	" 25.	Brazilian.....					280										10
180	" 25.	Devona.....	362				441										19
181	" 26.	Lakonia.....	162				343		14								15
		Total for October.....	7,197				9,896		40				2,976,905	592,210			429
		Previously reported.....	31,364				54,912		418				15,439,578	3,669,337			2,365
		Total for season.....	38,561				64,808		458				18,416,513	4,261,517			2,794
190		Same date 1901.....	41,415				67,704		1,160								

SESSIONAL PAPER No. 21

217	.....	Same date 1900	.....	29,411	.....	81,976	.....	2,710	.....
215	.....	" 1899	.....	52,606	.....	75,323	.....	4,452	.....
260	.....	" 1898	.....	28,900	.....	87,540	.....	5,381	.....

POPE & MORGAN,
Inspectors.

MONTREAL, October 31, 1902.

At this date, viz., 14th November, 1902, the complete returns for November cannot be obtained. Will appear at close of this report.

RECORD of Live Stock shipped from Port of Halifax, N.S., during Month of February, 1902.

Number.	Date.	Steamer.	Destination.	SHEEP.			CATTLE.			FEES COLLECTED.		HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Number Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.	\$	cts.	Shipped.	Lost.	Shipped.	Lost.	Lbs.	Lbs.	
19	Feb. 24...	Pretorian.....	Liverpool.....	.....	.....	*162	.....	162	.....	\$	cts.	.....	.....	.....	.....	43,800	12,474	7

* This lot of cattle were intended to be shipped at St. John, N.B., but the train was delayed and they did not arrive until after the vessel sailed. They were forwarded by rail to meet the vessel at this port.

GEO. MCKERROW,
Deputy Port Warden.

RECORD of Live Stock shipped from Port of Charlottetown, P.E.I., during Month of December, 1901.

1	1901.	Dec. 17...	Daltonhall.....	Liverpool.....	1,302	*	57	25	4450	\$1200	8

* No particulars. † No fees collected from shippers. ‡ Oats. § Turnips.

RECORD of Live Stock shipped from Port of Prince Edward Island during Month of July, 1902.

3	1902.	July 29...	Manch'r Commerce	Manchester....	1,310	50	26	4460	45	\$6	9

* No fees collected from shippers. † Bushels of oats. ‡ Bags of bran. § Bushels of turnips. Including foreman. § Bags of barley.
H. P. WELSH,
Inspector.

RECORD of Live Stock shipped from Port of St. John, N.B., during Months of November and December, 1901.

Number.	Date.	Steamer.	Destination.	SHEEP.			CATTLE.			HORSES.		Fees collected.	SWINE.		Hay for Feed.	Grain for Feed.	Number Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.	Shipped.	Lost.		Shipped.	Lost.			
	1901.											\$ cts.			Lbs.	Lbs.	
1	Nov. 30	Concordia	Glasgow.			237		237							71,275	21,200	9
2	" 30	Numidian	Liverpool	159		187		187							53,780	9,460	8
3	Dec. 2	Monmouth	Cape Town.							781	11						
4	" 7	Lake Superior	Liverpool	1,098		256		256							85,905	35,200	57
5	" 11	Amarynthia	Glasgow.	1,023	10	147		147							70,065	26,000	15
6	" 22	Corinthian	Liverpool	661	3	457		457	3	737	66				139,940	23,500	10
7	" 26	Huronia	Cape Town.														21
8	" 29	Man. Commerce	Manchester.			329		329							92,390	26,300	35
9	" 29	Aleides	Glasgow	150		133		133							49,615	12,750	13
		Total for Nov. and Dec		3,091	13	1,746		1,746	3	1,518	77				562,970	154,410	6
																	174

* The quantity of food shipped for the 1518 horses sent by the British Government to South Africa, I was unable to get record of.

RECORD of Live Stock shipped from Port of St. John, N.B., during Month of January, 1902.

Number.	Date.	Steamer.	Destination.	SHEEP.			CATTLE.			HORSES.		Fees collected.	SWINE.		Hay for Feed.	Grain for Feed.	Number Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.	Shipped.	Lost.		Shipped.	Lost.			
	1902.											\$ cts.			Lbs.	Lbs.	
10	Jan. 3	Lake Ontario	Liverpool	490	3	279		279		14					78,270	78,100	13
11	" 5	Numidian	"	147		277		277							83,740	8,700	12
12	" 11	Manchester City	Manchester	505		235	40	275							92,820	29,100	13
13	" 11	Concordia	Glasgow			168	50	218	1						71,705	14,400	8
14	" 17	Lake Superior	Liverpool	145		318	15	333							78,650	28,700	14
15	" 18	Pretorian	"	590	6	421	25	446							138,265	26,800	21
16	" 22	Manchester Trader	Manchester	147	1	310	20	330	1						96,950	28,500	14
17	" 25	Corinthian	Liverpool	140	2	516		516	3	16					140,665	37,500	21
18	" 26	Amarynthia	Glasgow			264	40	304	8						82,690	24,300	12
19	" 30	Marquette	Cape Town.							794	18						65
		Total for January		2,164	12	2,788	190	2,978	13	824	18				863,755	226,100	193

* Unable to obtain quantity of food supplied for horses shipped by the British Government to South Africa.

RECORD of Live Stock shipped from Port of St. John, N.B., during Month of February, 1902.

20 Feb.	9..	Numidian.....	Liverpool	307	.....	307	.....	.....	.....	.....	82,160	16,700	12
21 "	14	Manch'r Commerce.	Manchester.....	309	20	329	.....	.....	.....	.....	91,650	26,200	13
22 "	14	Lake Ontario.....	Liverpool.....	344	60	404	6	.....	.....	.....	98,900	36,700	18
23 "	15..	Alcides.....	Glasgow.....	180	20	200	2	15	.....	.....	58,565	17,700	8
24 "	22..	Pretorian.....	Liverpool	226	.....	226	.....	.....	.....	.....	101,195	24,300	14
25 "	23..	Manchester City.....	Manchester.....	348	65	413	.....	.....	.....	.....	116,145	31,400	18
26 "	23..	Concordia.....	Glasgow.....	135	25	160	2	.....	.....	.....	48,060	12,800	6
27 "	28..	Lake Superior	Liverpool	563	40	603	.....	21	.....	.....	140,770	50,300	25
Total for February				317	3	2,412	230	2 612	10	.....	737,445	216,100	114

RECORD of Live Stock shipped from Port of St. John, N.B., during Month of March, 1902.

28 Mar.	4..	Manchester Shipper.	Havre, France..	825	...	36	...	...	...	...	44,835	5
29 "	8..	Corinthian....	Liverpool	491	...	491	3	...	...	...	133,205	20
30 "	8..	Kastalia	Glasgow.....	173	...	173	...	17	...	...	57,485	8
31 "	10	Manchester Trader.	Manchester.....	290	20	310	1	...	...	12,500	87,080	12
32 "	15	Numidian.....	Liverpool	314	5	319	2	...	...	24,900	82,830	13
33 "	16	Lake Ontario.....	"	443	...	433	...	...	...	20,600	99,020	18
34 "	21	Lake Michigan.....	Cape Town.....	59	...	...	...	750	...	36,400	...	64
35 "	26	Manchester Commerce	Manchester.....	303	25	328	...	...	...	26,300	91,900	13
36 "	28	Indiana	Glasgow.....	113	...	113	...	...	...	40,000	33,945	5
Total for March.....				884	50	2,203	767	...	...	152,500	630,300	158

F. J. HARDING,
Agent.

2-3 EDWARD VII., A. 1903

APPENDIX

STATEMENT of Expenditure by the Marine Department

	1868.	1869.	1870.	1871.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Maintenance of lights--				
Above Montreal	40,561 28	42,306 69	46,289 05	44,054 01
Montreal District	23,053 56	25,762 54	21,669 49	22,453 52
Below Quebec	45,615 35	41,651 73	43,730 61	31,582 75
Nova Scotia	46,460 72	56,394 88	43,682 86	76,230 77
New Brunswick	20,488 00	23,893 00	27,485 14	20,542 29
Prince Edward Island				
British Columbia				
Construction--				
Above Montreal	3,136 15		2,976 83	8,770 55
Quebec	7,323 75	7,492 59	1,543 06	
Nova Scotia	22,041 42	6,905 80	18,967 23	10,948 31
New Brunswick			11,555 91	8,735 73
Prince Edward Island				
British Columbia				
Dominion steamers--				
Quebec	69,026 73	37,176 02	34,549 49	59,797 05
Nova Scotia	14,778 92	26,603 94	19,759 96	13,139 86
New Brunswick				
Prince Edward Island				
British Columbia				
Examination of masters and mates			908 12	1,407 66
Hudson's Bay expedition				
Investigations into wrecks			140 00	
Marine Hospital, Quebec	19,977 36	19,221 45	21,618 73	19,823 18
Marine hospitals	1,070 86	15,615 71	15,652 62	15,728 93
Meteorological service	8,200 00	8,950 00	8,950 00	9,379 82
Registration of Canadian shipping				
Removal of obstructions			2,350 07	1,000 00
Rewards for saving life				
Signal service				
Steamboat inspection	7,106 93	7,999 00	7,396 96	8,321 00
Survey, Georgian Bay				
Water Police, Montreal	27,445 35	10,238 71	9,323 31	8,030 00
" Quebec		12,633 59	9,038 62	9,370 73
Civil Government	15,083 88	18,064 25	19,401 05	20,220 96
Steam communication--				
Between Quebec and Maritime Provinces				
Between Prince Edward Island and Mainland				
Purchase of steamer to replace--				
Glendon				
Lady Head				
Winter mail service, Prince Edward Island				
Tidal observations				
Gratuities				
Survey, Burrard Inlet				
Export cattle trade				
	371,070 56	360,899 90	367,129 11	389,537 12

SESSIONAL PAPER No. 21

No. 7.

from Confederation to June 30, 1902.

1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
57,609 16	61,036 47	60,798 75	71,937 18	68,344 18	65,421 00	73,175 11	74,587 78	65,518 61
22,369 00	31,143 14	20,939 13	15,000 00	12,999 48	15,998 00	15,996 00	14,917 95	16,523 88
41,936 00	65,645 00	102,056 09	110,362 00	98,792 93	89,980 41	96,904 00	93,178 61	96,703 87
67,862 24	100,953 80	114,711 91	114,344 51	143,125 56	128,496 00	132,888 95	120,951 33	116,189 60
23,369 12	29,266 85	53,459 04	60,119 02	62,551 61	50,998 00	58,989 00	57,499 02	61,252 82
.....	.....	3,357 71	12,584 64	13,730 53	11,817 00	16,986 66	12,158 72	15,288 17
.....	13,207 09	18,519 50	15,983 72	17,175 97	15,853 00	18,948 78	15,152 73	15,576 99
6,940 45	18,999 38	24,461 86	14,286 65	13,320 40	16,267 98	7,207 96	11,993 75	13,297 81
57,818 35	39,303 87	41,950 82	19,325 00	24,336 47	12,945 29	12,776 47	4,154 58	7,797 75
34,760 12	90,181 79	51,867 94	43,898 63	42,214 55	25,550 00	13,500 00	17,386 97	7,069 01
9,561 14	16,691 06	31,572 60	8,842 97	17,819 85	7,083 82	12,028 13	22,598 14	4,985 53
.....	.....	.....	.....	11,829 61	17,752 00	2,504 47	2,560 88	6,074 50
.....	.....	4,353 93	8,799 07	8,477 67	29 66	.....	.....	.....
17,500 00	51,758 05	64,490 00	79,043 70	62,971 49	49,987 66	42,683 00	44,972 79	49,318 93
20,999 63	24,999 57	30,008 99	22,992 62	133,826 08	38,739 39	43,027 00	42,016 53	49,438 93
.....	.....	.....	.....	16,241 26	61,782 63	28,933 63	16,332 05	14,429 52
12,115 96	15,984 72	10,555 67	41,796 74	10,156 56	16,095 90	12,193 40	7,460 68	9,733 34
4,312 07	6,466 18	4,520 19	5,696 62	4,672 08	4,050 00	4,249 76	4,250 12	4,253 43
874 00	1,068 89	2,313 31	366 00	466 41	342 65	500 00	1,691 00	676 73
21,000 00	21,000 00	20,456 45	21,994 75	23,795 85	19,965 97	19,987 50	20,791 77	12,991 23
53,536 16	27,150 43	45,986 87	37,111 67	37,155 72	42,449 55	37,487 10	37,445 57	35,040 00
12,618 15	18,830 54	36,700 59	33,580 00	45,560 03	44,871 38	46,050 24	45,706 13	45,554 51
.....	.....	272 30	1,096 46	412 06	842 14	1,435 10	239 26	257 75
.....	.....	.....	450 00	.....	203 00	462 00	305 86	825 00
2,284 32	1,975 13	4,931 78	3,552 86	2,292 20	1,958 55	4,071 00	2,533 10	2,263 15
.....	.....	1,000 00	.....	.....	.....	.....	.....	.....
8,500 00	13,266 00	10,291 58	12,200 00	13,081 86	13,073 01	13,228 38	13,076 46	11,854 34
10,000 00	14,453 87	12,370 86	13,395 00	14,090 00	13,524 29	14,062 00	13,462 74	13,131 06
10,348 00	18,200 00	26,526 66	24,500 00	27,136 68	21,482 08	23,498 06	23,023 26	22,094 48
22,644 52	25,336 04	30,087 23	31,326 18	32,789 18	32,304 12	32,682 50	36,610 19	35,083 95
.....	.....	15,000 00	10,000 00	10,000 00	.....	.....	.....	.....
.....	.....	.....	.....	750 00	.....	.....	.....	.....
.....
.....
.....
.....
.....
.....
.....
518,958 49	706,817 92	845,150 09	844,586 09	970,146 27	820,054 38	786,156 23	755,359 47	723,360 89

2-3 EDWARD VII., A. 1903

STATEMENT of Expenditure by the Marine Department

	1881.	1882.	1883.
	\$ cts.	\$ cts.	\$ cts.
Maintenance of lights—			
Above Montreal.....	65,541 21	71,048 50	70,116 68
Montreal District.....	14,326 36	21,643 05	22,260 32
Below Quebec.....	89,781 29	91,098 66	102,784 99
Nova Scotia.....	128,918 59	137,845 15	150,793 17
New Brunswick.....	63,921 90	66,073 00	75,946 92
Prince Edward Island.....	12,997 36	16,985 72	17,907 27
British Columbia.....	17,570 72	17,803 00	18,349 06
Cape Race.....			
Construction—			
Above Montreal.....	14,180 02	13,581 00	9,782 27
Quebec.....	7,539 76	3,731 31	9,672 50
Nova Scotia.....	7,757 52	13,355 00	9,422 75
New Brunswick.....	4,578 52	2,253 80	1,022 57
Prince Edward Island.....	8,150 06	3,092 00	1,934 49
British Columbia.....	8,655 39	3,237 90	1,005 26
Queen's Printer.....			
Dominion steamers—			
Quebec.....	64,973 00	44,923 98	45,156 13
Nova Scotia.....	36,700 00	31,049 74	37,841 07
New Brunswick.....			
Prince Edward Island.....	15,139 95	23,911 97	19,680 00
British Columbia.....	11,788 09	8,504 61	25,484 00
Department.....			
Examinations of masters and mates.....	3,888 41	3,981 00	4,021 20
Hudson's Bay expedition.....			
Investigation into wrecks.....	310 48	863 19	875 64
Marine hospital, Quebec.....	19,964 33	19,938 12	19,998 53
Marine hospitals.....	32,218 94	33,162 45	29,880 78
Meteorological service.....	46,163 54	47,464 07	51,990 25
Registration of Canadian shipping.....	607 43	2,013 28	168 84
Removal of obstructions.....	150 00	1,116 51	35 80
Rewards for saving life.....	1,806 13	2,212 00	2,534 60
Signal service.....			3,365 33
Steamboat inspection.....	12,211 65	14,835 00	16,209 00
Hydrographic surveys.....			77 81
Water Police, Montreal.....	21,953 26	21,994 74	15,798 24
" Quebec.....	13,497 81	20,221 82	22,520 41
Civil Government.....	36,447 50	36,789 46	37,988 39
Steam communication—			
Between Quebec and Maritime Provinces.....			
Between Prince Edward Island and Mainland.....			
Repairs to wharfs.....			
Purchase of steamers to replace—			
Stanley.....			395 55
Glendon.....			
Lady Head.....			
Winter mail service, Prince Edward Island.....			
Tidal observations.....			
Gratuities.....			
Survey, Burrard Inlet.....			
Export cattle trade.....			
Survey, Bay of Quinté.....			
Relief of distressed Canadians.....			
Manning ships.....			
Widow of late A. Warner.....			
McDonald Bros.....			
Parliamentary Returns.....			
Investigating effect of Chicago drainage canal.....			
John McDonald.....			
Longitude, Montreal.....			
Marine biological station.....			
	761,730 62	774,831 53	825,010 82

2-3 EDWARD VII., A. 1903

STATEMENT of Expenditure by the Marine Department

	1892.	1893.	1894.
	\$ cts.	\$ cts.	\$ cts.
Maintenance of lights—			
Above Montreal.....	87,033 61	87,598 15	78,090 69
Montreal District.....	116,531 27	120,404 19	124,348 80
Below Quebec.....			
Nova Scotia.....	148,815 26	150,445 26	137,339 73
New Brunswick.....	66,886 69	71,079 46	59,917 96
Prince Edward Island.....	17,069 98	16,819 64	15,569 39
British Columbia.....	26,858 68	24,413 27	27,240 77
General account.....			
Construction—			
Above Montreal.....	21,704 65	8,766 62	12,581 15
Quebec.....	809 27	10,097 18	4 743 13
Nova Scotia.....	1,965 16	4,381 24	3,104 77
New Brunswick.....	1,845 35	1,271 15	115 45
Prince Edward Island.....	1 56		1,604 00
British Columbia.....	9,478 81	2,958 61	6,356 43
General account.....			
Dominion steamers—			
Quebec.....	145,899 61	163,097 46	178,183 97
Nova Scotia.....			
New Brunswick.....			
Prince Edward Island.....			
British Columbia.....			
Department.....			
Examinations of masters and mates.....	6,363 88	4,116 99	3,745 33
Hudson's Bay expedition.....			
Investigation into wrecks.....	603 21	643 49	850 81
Marine hospital, Quebec.....			
Marine hospitals.....	34,106 83	35,757 07	38,403 94
Meteorological service.....	67,138 06	64,165 60	66,440 96
Registration of Canadian shipping.....	462 59	1,476 19	394 00
Removal of obstructions.....	2,878 68	1,554 53	202 02
Rewards for saving life.....	6,398 93	7,432 64	8,014 67
Signal service.....	5,014 42	5,040 58	4,668 93
Steamboat inspection.....	22,736 59	24,386 95	25,961 36
Hydrographic surveys.....	16,451 10	17,542 11	31,461 76
Water Police, Quebec.....	6,161 60	5,436 23	
Civil Governn.ent.....	43,195 31	56,477 23	54,988 88
Repairs to wharfs.....		84 90	1,007 67
Purchase of steamer Minto.....			
Winter mail service, Prince Edward Island.....	3,309 44	4,376 96	6,497 03
Tidal observations.....	711 59	5,099 17	10,172 61
Gratuities.....			3,261 32
Survey, Burrard Inlet.....	2,580 45		
Export cattle trade.....	1,411 57	1,711 73	1,350 83
Survey, Bay of Quinté.....		2,085 45	
Relief of distressed Canadians.....			
Manning ships.....			
Widow of late A. Warner.....			
Macdonald Bros.....			
Parliamentary returns.....			
Investigating effect of Chicago drainage canal.....			
John Macdonald.....			
Unforeseen expenses.....			
Marine biological station.....			
New life-saving station, Long Point.....			
Salaries temporary clerks.....			
Steamer to replace Bayfield.....			
Observatory, Sulphur Mountain.....			
Charles Morrison.....			
W. H. Smith.....			
	861,426 80	898,720 03	905,654 34

SESSIONAL PAPER No. 21

from Confederation to June 30, 1902—*Concluded.*

1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
82,541 16	87,256 28	80,961 06	87,841 22	92,751 23	82,810 92	93,708 16	92,195 52
124,763 81	124,143 66	126,186 00	116,279 88	136,134 79	122,112 42	132,147 88	154,839 06
140,977 53	123,234 65	124,671 19	126,386 00	65,072 35	122,414 86	142,359 01	149,572 14
69,654 46	63,018 64	56,771 02	67,369 98	128,674 15	52,491 93	65,247 80	69,133 51
17,976 67	17,988 15	16,429 23	18,112 93	20,589 81	42,878 40	28,031 85	24,223 73
21,734 18	24,770 44	25,679 52	26,862 03	29,530 20	33,545 95	31,938 25	35,119 03
.....	.....	.....	.....	.....	.....	.....	46 75
2,699 40	11,993 84	9,527 84	6,867 69	3,729 62	7,094 64	12,499 99	158,714 09
3,004 14	3,300 00	296 26	3,649 90	37,838 80	40,319 03	17,060 03	
4,737 03	1,842 94	61 71	4,067 99	3,123 16	4,884 22	12,832 69	
1,597 80	200 00	1 60	1,423 34	91 49	.....	266 34	
.....	.....	452 90	1,409 60	616 96	5,586 91	922 00	
180 83	225 50	569 99	6,414 19	19,305 60	.....	4,160 74	
.....	.....	.....	.....	.....	.....	660 03	.....
169,661 64	145,315 28	136,940 11	117,644 39	145,270 75	180,430 65	195,484 75	452,526 92
2,757 29	4,062 82	3,536 29	3,335 40	3,568 26	3,750 69	3,730 25	3,305 59
.....	.....	19,091 32	27,050 66	.....	.....	.....	.....
351 15	483 98	565 25	312 77	982 17	773 06	1,022 65	1,824 55
38,589 05	36,682 96	37,984 71	38,162 56	37,353 29	37,743 30	36,008 75	51,827 13
64,588 34	66,600 29	67,397 71	64,135 71	73,148 05	67,692 42	74,082 76	80,147 46
207 40	517 60	531 55	818 33	966 48	266 43	546 62	607 23
2,217 36	456 38	631 86	704 17	745 49	252 19	1,000 00	1,325 25
6,591 34	8,004 38	5,955 19	5,031 40	7,049 09	7,007 97	8,519 92	8,278 55
5,311 74	5,338 76	5,986 12	4,993 88	6,067 49	5,906 83	8,950 17	6,452 56
26,385 88	26,321 27	26,837 83	26,342 29	28,035 49	27,965 72	29,247 59	27,493 80
12,653 28	15,099 63	12,352 99	15,306 66	13,664 97	12,600 98	16,170 20	25,488 64
71,373 82	.....	74,801 37	74,644 05	72,833 97	63,331 61	68,776 95	70,246 32
824 38	2,644 69	1,795 56	1,618 97	.....	697 87	1,261 06	2,824 28
.....	.....	.....	.....	144,365 26	41,951 88	.....	.....
6,138 18	7,779 69	21,931 05	9,575 31	8,439 70	1,503 70	2,093 93	8,835 86
11,507 24	9,627 45	13,166 20	3,081 45	5,186 35	4,372 18	7,060 20	8,925 33
.....	.....	.....	.....	.....	.....	.....	136 85
2,268 74	2,887 24	.....	2,499 80	2,757 85	2,762 24	2,746 84	3,321 23
7 30	.....	.....	.....	.....	.....	.....	.....
500 00	746 89	.....	.....	.....	.....	.....	.....
160 00	.....	.....	.....	.....	.....	.....	.....
4,000 00	.....	.....	.....	.....	.....	.....	.....
.....	291 08	.....	.....	.....	.....	133 32	.....
.....	2,500 00	.....	.....	.....	.....	1,659 14	.....
.....	200 00	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	3,452 21	2,630 62	3,490 29
.....	.....	.....	.....	5,709 10	739 61	1,990 58	1,998 85
.....	.....	.....	.....	.....	.....	.....	1,780 52
.....	.....	.....	.....	.....	.....	.....	2,967 35
.....	.....	.....	.....	.....	.....	.....	50,000 00
.....	.....	.....	.....	.....	.....	.....	55 00
.....	.....	.....	.....	.....	.....	.....	223 00
.....	.....	.....	.....	.....	.....	.....	3,691 69
895,828 28	793,634 49	867,772 90	856,192 50	1,102,601 90	982,561 97	1,029,925 32	1,501,618 88

APPENDIX No. 8.

STATEMENT relating to the Wharfs under the control of the Department, on
June 30, 1902.

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
<i>Ontario.</i>				\$ cts.
Bruce Mines.....	Wm. Fleming.....	Apl. 15, 1902.	25 p.c. of collections ...	16 83
Cockburn Island.....	Alfred Monck.....	May 20, 1890.	25 "	58 22
Goderich.....	W. Marlton.....	Feb. 14, 1894.	25 "	*299 00
Hilton, St. Joseph Id., Algoma	E. Stubbs.....	June 20, 1898.	50 "	216 89
Kingsville.....	W. H. Black.....	Aug. 1, 1902.	25 "	6 58
Morpeth.....	C. Stammers.....	Aug. 1, 1894.	25 "	
North Bay.....	W. McKenzie....	Oct. 9, 1900.	25 "	8 53
Port Rowan.....	John Collett.....	May 2, 1898.	25 "	
Richard's Landing, Algoma..	R. Armstrong.....	Mar. 11, 1899.	25 "	133 40
Rondeau.....	W. R. Fellows.....	Dec. 17, 1888.	25 "	146 24
Sault Ste. Marie.....	George A. Boyd . .	April 9, 1897.	\$142 per month during season of navigation...	2,506 11
Southampton.....	Geo. McVittie	Aug. 16, 1895.	25 p.c. of collections.....	66 30
Summerstown.....	Under lease.....			
Thessalon, Algoma.....	D. J. Sandie.....	Apl. 22, 1902.	25 p.c. of collections.....	
Wiarton.....	H. R. A. Ely.....	Dec. 10, 1890.	25 "	96 67
Total.....				3,554 77
<i>Quebec.</i>				
Agnes.....	L. A. Roy.....	Nov. 27, 1891.	25 p.c. of collections.....	
Anse St. Jean.....	F. Lavoie.....	Mar. 13, 1895.	25 "	57 58
Baie St. Paul.....	Vacant.....		25 "	
Baie St. Paul, Isolated Block.	A. Simard.....	Aug. 25, 1891.	25 "	79 45
Beauport.....	D. Giroux.....	Nov. 11, 1896.	25 "	31 40
Berthier.....	E. Gaumond.....	July 5, 1897.	50 "	132 44
Cap à-l'Aigle.....	Jos. Guay.....	Oct. 7, 1896.	25 "	45 95
Carleton.....	Chas. Bernier.....	Apl. 15, 1902.	\$50 per annum.....	28 07
Cascades.....	Moise Leroux.....	Oct. 20, 1897.	25 p.c. of collections.....	
Cedars.....	J. Reay.....	Apl. 29, 1898.	25 "	17 10
Chicoutimi.....	Thomas Tremblay...	May 23, 1901.	25 "	271 47
Coteau du Lac.....	M. St. Amour.....	Sept. 21, 1896.	25 "	27 84
Coteau Landing.....	J. A. Prieur.....	May 25, 1897.	25 "	102 62
Echo Vale, Lac Megantic....	D. P. Matheson....	May, 16, 1894.	25 "	
Esquimaux Point.....	Vacant.....			
Grand River.....	Geo. Beaudin.....	Nov. 16, 1896.	25 "	288 08
Greeces Point.....	T. Ranger.....	July 16, 1902.	25 "	10 24
Isle aux Grues.....	Jos. Painchaud.....	Feb. 17, 1890.	25 "	0 12
Isle Perrot.....	Rodger Leduc.....	Oct. 20, 1897.	25 "	
Knowlton's Landing.....	L. Knowlton.....	Nov. 26, 1897.	25 "	35 10
Lacolle.....	R. J. Robinson.....	Mar. 8, 1894.	25 "	9 76
Les Eboulements.....	M. Tremblay.....	Sept. 4, 1894.	25 "	83 81
L'Islet.....	Octave Morin.....	Feb. 8, 1893.	25 "	
Longueuil.....	Eusébe Denicourt...	May 15, 1901.	25 "	17 00
Magog.....	Edward Addy.....	June 20, 1898.	25 "	
Matane.....	Louis Durette.....	Aug. 25, 1900.	25 "	115 56
Murray Bay.....	Elie Maltais.....	" 12, 1893.	25 "	163 69
New Carlisle.....	John Chisholm....	Apl. 25, 1902.	25 "	273 91
Percé.....	T. W. Flynn.....	Jan. 19, 1893.	25 "	24 71
Port Daniel.....	C. Sweetman.....	Mar. 12, 1901.	\$50 per annum.....	134 14
Port Lewis.....	Sam. Carson.....	Sept. 21, 1899.	25 p.c. of collections...	

*Commissions on collections are paid on total collections which exceed the amount to credit by the commission retained.

SESSIONAL PAPER No. 21

STATEMENT relating to Wharfs, &c.—*Continued.*

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
<i>Québec—Con.</i>				\$ cts.
Rimouski.....	Chas. Lepage.....	July, 24, 1894.	25 p.c. of collections	
Rivière Quelle.....	J. Hudon dit Beau-lieu.....	Nov. 28, 1892.	25	
Rivière du Loup.....	F. E. Gilbert.....	Aug. 15, 1902.	25	804 16
St. Anicet.....	S. Dupis.....	Sept. 14, 1896.	25	
St. Alphonse de Bagotville.....	Abel Tremblay.....	July 7, 1891.	25	167 54
St. Irene.....	Geo. Bouchard.....		25	55 69
St. Jean d'Orleans.....	L. Lachance.....	Sept. 26, 1896.	25	147 21
St. Jean Port Joli.....	J. Pelletier.....	" 14, 1896.	25	
Ste. Cécile du Bic.....	Olivier Ouellet.....	Aug. 25, 1900.	25	76 22
St. Laurent d'Orleans.....	Ed. Chabot.....	" 25, 1894.	25	107 46
St. Thomas de Montmagny.....	L. Dionne.....	Oct. 22, 1896.	25	2 62
St. Zotique.....	J. M. Leroux.....	Sept. 21, 1896.	25	
Tadousac.....	A. Christiansen.....	Oct. 20, 1897.	25	122 46
Trois Pistoles.....	D. Damour.....	May 10, 1895.	25	
Valois Point.....	L. Gastonguay.....	Oct. 20, 1897.	25	
Ville Marie.....	Jules Maillard.....	Feb. 2, 1899.	25	
<i>Nova Scotia.</i>				Total..... 3,433 40
Arisaig.....	H. R. McAdam.....	Dec. 30, 1898.	25 p.c. of collections	56 94
Avonport.....	L. F. Fuller.....	Aug. 15, 1902.	25	2 00
Babbins Cove.....	Alex. Thomas.....	Oct. 20, 1897.	25	
Barrington.....	J. H. Christie.....	Aug. 31, 1896.	25	162 82
Bass River.....	Jotham Fulton.....	Jan. 6, 1898.	25	
Bayfield.....	Roderick Grant.....	April 23, 1902.	25	33 35
Bear Point.....	E. R. Smith.....	Feb. 19, 1902.	25	0 34
Belliveau Cove.....	St. Clair Theriau.....	Nov. 24, 1902.	25	113 14
Broad Cove.....	John Teal.....	June 12, 1893.	25	
Broad Cove Marsh.....	Hugh McDonald.....	Oct. 19, 1892.	25	
Brooklyn.....	F. T. Gardiner.....	" 20, 1882.	25	
Canada Creek.....	Henry Dickey.....	Aug. 12, 1899.	25	
Cape Cove.....	J. A. Ellis.....	May 14, 1897.	25	2 83
Centreville.....	Alfred Ward.....	" 28, 1897.	25	23 53
Chipman's Brook.....	John Kirby.....	" 24, 1901.	25	86 89
Church Point.....	Chas. F. Belliveau.....	Aug. 20, 1892.	25	1 26
Cranberry Head.....	Abram Thurston.....	Feb. 16, 1889.	25	74 54
Cribbens Pier, Antigonish Hr.	A. R. Boyd.....	Oct. 2, 1895.	25	
Delap's Cove.....	R. W. McCaul.....	Nov. 28, 1889.	25	
Descousse.....	Thos. Boudiot.....	Feb. 22, 1902.	25	16 74
Digby.....	W. W. Hayden.....	April 20, 1897.	25	27 28
Eagle Head.....	Nathan Leslie.....	Jan. 9, 1899.	25	2,330 77
East Bay.....	Donald McInnis (Ronald's son).....	April 5, 1866.	25	
East River, Sheet Harbour...	Malcolm McFarlane.....	May 20, 1890.	25	
Grand Narrows, Victoria Co.	F. X. McNeil.....	Nov. 11, 1896.	25	
Grand Narrows, Cape Breton Co.	Neil McNeil, jr.....	Aug. 6, 1898.	25	
Grand Village.....	Vacant.....			
Hall's Harbour.....	T. A. Neville.....	Jan. 8, 1897.	25 p.c. of collections	17 49
Hampton.....	Judson Foster.....	Aug. 25, 1888.	25	50 48
Hantsport.....	Vacant.....			
Harbourville.....	Isaac Cook.....	May 28, 1897.	25 p.c. of collections	27 93
Horton Landing.....	F. G. Curry.....	April 30, 1898.	25	7 23
Iona, Grand Narrows.....	F. S. X. McNeil.....	June 8, 1901.	25	
Irish Cove.....	Malcolm E. McNeil.....	June 6, 1902.	25	45 02
Isaacs Harbour.....	T. D. Cook.....	Jan. 30, 1902.	25	
Jordan Bay.....	John Fredericks.....	Feb. 20, 1900.	25	20 66
Kelly Cove.....	Jos. B. Huskins.....	April 11, 1899.	25	121 18
Little Narrows.....	Vacant.....			
Lismore.....	D. A. McKinnon.....	July 5, 1895.	25 p.c. of collections	
Maitland, Hants Co.....	Vacant.....			
Port Maitland, Yarmouth Co.	J. Ellis.....	Dec. 10, 1896.	25 p.c. of collections...	
Margaretsville.....	C. S. McLean.....	May 7, 1897.	25	34 16

2-3 EDWARD VII., A. 1903

STATEMENT relating to Wharfs, &c.—Continued.

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
<i>North Scotia—Con.</i>				\$ cts.
Meteghan Cove.....	H. F. Robicheau...	May 28, 1897.	25 p.c. of collections	120 05
Meteghan River.....	D. D'Entremont....	" 14, 1897.	25 "	67 11
Militia Point.....	D. McIntosh.....	Aug. 20, 1892.	25 "	42 59
Morden.....	John Redgate....	Nov. 16, 1893.	25 "	7 01
Noel.....	Vacant.....			
Northside, Boularderie.	Dan McKenzie.....	Nov. 26, 1897.	25 p.c. of collections....	
Oak Point (Kingsport)....	Rent from Railway Company.....			200 00
Ogilvie.....	R. S. Armstrong....	May 13, 1901.	25 p.c. of collections	14 51
Parrsboro'.....	Thompson Tipping..	Nov. 26, 1888.	25 "	40 00
Parker's Cove.....	John A. Clarke....	June 26, 1901.	25 "	32 02
Pickett's Wharf.....	Freeman A. Eaton..	Aug. 2, 1899.	25 "	72 30
Pictou Island.....	Vacant.....			
Plympton.....	Wm. K. Smith.	Aug. 8, 1890.	25 p.c. of collections....	
Point Brulé.....	Alex. Craig.....	Dec. 26, 1898.	25 "	0 33
Port Dufferin Halifax Co.	H. J. Balcom.....	Feb. 17, 1899.	25 "	36 00
Port George.....	Outhit Douglas....	June 26, 1900.	25 "	118 90
Port Greville.....	Vacant.....			
Port Hood.....	Albert Macdonnell..	May 22, 1900.	25 p.c. of collections....	
Port Joli.....	Jos. S. McAdams....	Feb. 5, 1900.	25 "	
Port La Tour.	David Sholds.....	Feb. 1, 1900.	25 "	18 96
Port Lorne.....	Freeman Beardsley..	June 22, 1897.	25 "	42 22
Port Morien.....	John McAuley....	Dec. 10, 1896.	7 1/2 "	449 94
Riverside.....	Geo. W. Hawes....	Mar. 11, 1902.	25 "	4 43
Salmon River Digby Co.	J. M. Deveau.....	Nov. 29, 1890.	25 "	
Saulnierville.....	John T. Saulnier....	Aug. 25, 1888.	25 "	12 85
Swims Point.....	J. F. Duncan.....	Jan. 23, 1902.	25 "	19 35
Tancock Island.....	Amos H. Stevens ...	Mar. 11, 1898.	25 "	
Tidnish.....	R. A. Smith.....	Sept. 27, 1901.	25 "	2 65
Town Point.....	J. A. Haley.....	Aug. 16, 1901.	25 "	71
Tracadie.....	J. M. Hall.....	Nov. 6, 1888.	25 "	
Tusket Wedge.....	Vacant.....			
Victoria.....	Amos West.....	Dec. 4, 1900.	25 p.c. of collections....	
Wallace.....	Vacant.....			
Wallace Harbour, South side.	".....		25 p.c. of collections....	
West Pubnico.....	Chas. C. D'Entremont ..	Mar. 28, 1898.	25 "	
West River, Sheet Harbour..	Malcolm McFarlane.	Sept. 3, 1889.	25 "	25 45
White Point.....	Elisha West.....	Jan. 9, 1889.	25 "	
White Waters.....	Joseph Irvine.	Sept. 27, 1901.	25 "	
Wolfeville.....	J. L. Franklin.....	Oct. 22, 1901.	25 "	9 41
<i>New Brunswick.</i>				
Total.....				4,591 37
Anderson's Hollow	W. C. Anderson....	Feb. 13, 1899.	25 p. c. of collections....	46 75
Black River.....	Vacant.....			
Buctouche.....	J. J. LeBlanc.....	May 2, 1892.	25 p. c. of collections ..	15 32
Campbellton.....	Alfred J. Venner ...	June 10, 1893.	25 "	265 10
Cape Tormentine	E. T. Allen.....	Oct. 20, 1897.	25 "	545 07
Clifton, Stonehaven.....	S. Payne.....	Nov. 9, 1894.	25 "	14 85
Cocagne.....	H. Bourgeois	Aug. 9, 1900.	25 "	2 10
Dalhousie.....	W. J. Smith.....	June 27, 1891.	25 "	72 93
Edgett's Landing.....	Thos. Barnett.....	July 5, 1895.	25 "	7 71
Gardener's Creek	Robert Wallace....	Dec. 11, 1899.	25 "	
Hopewell Cape	Geo. D. Wilson....	Apr. 10, 1899.	25 "	26 84
Kingston.....	P. Thibodeau....	Jan. 31, 1901.	25 "	
Neguac.....	B. Poirier.....	June 17, 1897.	25 "	
Quaco.....	Wellington Vale ...	Dec. 19, 1899.	25 "	18 91
St. Louis.....	C. Frigand.....	Oct. 29, 1895.	25 "	
St. Mary's.....	M. J. S. LeBlanc....	Mar. 1, 1897.	25 "	
St. Nicholas River, S. Welford	John Grant.....	Sep. 27, 1901.	25 "	
Tracadie.....	Prosper Savoy.....	" 23, 1899.	50 "	
Total.....				1,015 58

SESSIONAL PAPER No. 21

STATEMENT relating to Wharfs, &c.—*Concluded.*

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
<i>Prince Edward Island.</i>				\$ cts.
Annandale.....	W. C. Jenkins....	May 4, 1897.	25 p. c. of collections...	64 93
Bay View	Joseph Harrington..	Oct. 2, 1885.	25 "	24 00
Belfast.....	Jas. F. Halliday....	Mar. 1, 1901.	25 "	70 34
Brush Wharf, Port Selkirk...	Levi R. Ings....	Sep. 18, 1885.	25 "	122 19
Campbell's Cove.....	Angus McIntyre....	Oct. 17, 1888.	25 "	
Chapel Point.....	Ronald McCormack..	Sep. 18, 1885.	25 "	14 25
China Point.....	W. S. N. Crane.....	" 18, 1885.	25 "	22 02
Clifton.....	John Gunn.....	May 24, 1900.	25 "	
Cranberry, East River.....	James Hughes.....	Mar. 11, 1898.	25 "	
Crapaud and Victoria Pier...	E. McKinnon.....	July 7, 1897.	25 "	257 34
Georgetown.....	James Bourke	" 2, 1885.	25 "	
Haggerty's Wharf, E. River..	M. Burnett.....	Feb. 14, 1898.	25 "	
Hickey's Wharf	Mark Webster.....	Oct. 22, 1896.	25 "	35 00
Higgin's Shore.....	G. G. Henry.....	Nov. 9, 1891.	25 "	
Hurd's Point.....	Thos. Montgomery..	Aug. 16, 1901.	25 "	14 45
Kier's Shore.....	W. Hodgson.....	June 10, 1895.	25 "	192 27
Lambert and Stevens.....	Wellington Johnston	May 3, 1900.	25 "	115 68
Lewis Point.....	J. G. Scrimigeour...	Oct. 14, 1896.	25 "	
McGee's Wharf, Abram's Vill.	Norman Gallant	Nov. 9, 1891.	25 "	
Mink River or Murray Har- bour, North.....	Jas. P. Clow.....	Aug. 25, 1900.	25 "	8 30
Murray Harbour, South.....	J. McKinnon.	Jan. 27, 1896.	25 "	
Nine Mile Creek.....	Edward Harrington..	Oct. 29, 1885.	25 "	
North Cardigan	Rodk. J. Steele.....	May 1, 1901.	25 "	43 40
Pinette.....	Malcolm McLeod....	Jan. 3, 1901.	25 "	20 36
Pownal.....	M. M. Haley.....	Oct. 13, 1896.	25 "	73 69
Red Point	Arch. Smith	Apr. 3, 1900.	25 "	18 06
St. Mary's Bay	John Dickson.	Dec. 10, 1896.	25 "	23 79
Souris	Angus McDonald,			
South Rustico, Oyster Bed	caretaker.....	Sep. 27, 1894.	25 "	
Bridge	D. Gallant.....	Feb. 23, 1895.	25 "	8 62
Sturgeon Pier.....	Bernard Kearney ...	Sep. 18, 1885.	25 "	44 31
Tignish..	A. J. Gaudet.....	Aug. 28, 1898.	25 "	22 13
Vernon River.....	W. M. Forbes ...	Apr. 22, 1902.	25 "	177 58
Wood Island	Jas. Young.....	" 10, 1899.	25 "	17 96
Total				1,390 67

RECAPITULATION.

Ontario.....	\$ 3,554 77
Quebec.....	3,433 40
Nova Scotia.....	4,591 37
New Brunswick.....	1,015 58
Prince Edward Island.....	1,390 67
Total wharfage dues collected and placed to credit of Receiver General.....	\$ 13,985 79
ADD—Fees received by undermentioned harbour masters in excess of remuneration allowed:—	
Harbour Master—St. Johns, Que.....	\$ 166 50
" Canso, N.S.....	61 00
" International Pier, N.S.....	89 00
" Chatham, N.B.....	22 50
" Hillsborough, N.B.....	88 90
" Chemainus, B.C.....	55 00
" Victoria, B.C.....	15 50
498 40	
Total Revenue from Wharfs and Harbours.....	\$ 14,484 19

2-3 EDWARD VII., A. 1903

APPENDIX No. 9.

NAVAL ASSISTANT'S OFFICE,
HALIFAX, N.S., October 10, 1902.

The Deputy Minister,
Marine and Fisheries Department,
Ottawa.

SIR,—I have the honour to make the following report on the life saving stations in the Maritime Provinces, Sable Island excepted, that establishment being under the inspection of Mr. C. A. Hutchins, superintendent of lighthouses in the province.

INSPECTION OF STATIONS.

The whole of the stations have been inspected by me during the year, and I have much pleasure in stating that with one exception, Duncan's Cove, they are in an efficient state, discipline has been maintained, and a zealous desire on the part of the officers in charge has been manifested to keep the stations thoroughly reliable in the event of wreck.

SERVICES AT WRECKES.

Three casualties of importance have occurred during the year.

The *Mira*, a steamship, near Yarmouth, in February last.

The Allan steamship *Grecian*, at the entrance of Halifax Harbour, in the same month, and

The steamship *Lake Superior*, at the entrance of the harbour of St. John, N.B., in April last.

At neither of these casualties were the services of the life boats near them, required, but at both Yarmouth and Halifax, the officers in charge visited the ships ashore and were ready to act if necessary.

Other minor disasters have taken place, and the coxswains, where necessary, have tendered their services.

HERRING COVE.

The launching ways at this station require extensive repairs, and number of rocks off the slip must be removed.

DUNCAN'S COVE.

The old Dobbin self-righting self-bailing boat, requires extension repairs, as the boat is old, extremely heavy, bad to pull against wind and sea, I consider she is not worth repairs.

This type of life boat, with high ends for self-righting purposes, has become obsolete. The boat is costly, \$575, more than double the price of the Bebe McLellan self-bailing boat at \$250, which is eminently adapted for our stations, as she is safe, light for launching and hauling up, and manageable with a crew of six men and a coxswain.

The Dobbin boat is practically useless in a gale of wind and heavy sea from the offing.

SESSIONAL PAPER No. 21

I have, therefore, in another report, thoroughly advocated the condemnation of the Dobbin boat at Duncan's Cove, and the building of a Bebe McLellan boat, similar to those recently placed at St. Paul's Island, Blanche, Clark's harbour, and Seal cove, Grand Manan.

All these boats are preferred by the officers and crews to the Dobbin class of boat.

Lyle Gun Apparatus.

Great difficulty has been found in reference to this class of gun.

At Duncan's Cove, early last year, after drill practice with small charges of powder—only five ounces—the gun contracted and one of the projectiles, after entering it, became jammed in the gun.

Using two double luff tackles with the fall taken to a powerful winch, with seven men at the handles, I found it impossible to extract the projectile.

The gun was then taken to H.M.S. *Charybdis*, Commodore Giffard having kindly allowed his armourers' staff to release the projectile by heating the gun sufficiently to cause its expansion.

Subsequently the gun was bored to take the projectiles. I may here state that strict orders have been issued by me, to the officers at St. Paul's Island and at Duncan's Cove, to keep the guns and projectiles free from oxidation by careful cleaning, and lubricating them with vaseline. And I know from personal inspection that this has been done.

Notwithstanding this, on my recent visit to Duncan's Cove, the coxswain reported to me that the Lyle gun at that station was absolutely useless, as he found it impossible to enter the projectiles further than 8 inches from the muzzle, the projectiles being 14 inches in length, it was 6 inches from the chamber in the breach.

I personally tested the 12 projectiles, and found this to be the case.

I therefore took the spare gun, the one that had been rebored, from the Marine and Fisheries Stores, to Duncan's Cove, and tested it with 5 and 8 ounce charges, and I am glad to say, the projectiles entered easily after the gun had been carefully cleaned after each discharge.

Careful sponging and cleaning is evidently essential to the effective working of the Lyle gun, as the bore is very slightly larger in diameter than the projectile used, the latter fitting as closely as a plunger in a metallic pump.

As stated before, the gun now at the Duncan's Cove Station, is the one that was purchased last year, and was rebored to fit the projectiles used by the Messrs. Longard Brothers.

On my recent visit, I again tested the gun, which, although perfectly clean and bright, will not admit the projectiles and I propose having it rebored to the same gauge as that above referred to.

Lately I was informed by Mr. John Campbell, the son of the superintendent at St. Paul's Island, that they are in the habit of cleaning the Lyle gun at that station, after drill, with boiling water. This may be practicable at the station, but it is evident it could not be adopted on service at wrecks on the coast remote from houses, or in bad weather.

But, in order to keep the guns perfectly clean and bright, I intend to supply the stations with elastic sponges and cleaners.

I have the honour to be, sir,
Your obedient servant,

BLOOMFIELD DOUGLAS, R.N.R.,
Naval Assistant.

2-3 EDWARD VII., A. 1903

LIFE Saving Stations maintained

Number.	Stations.	Established.	Coxswain.	Crew.	Coxswain's Salary. Per annum.	Pay of Crew.
Bay of Fundy—						
1	Seal Cove.....	1898	F. Benson.....	7	75	\$1.50 per drill, and extra when engaged saving life.
2	Yarmouth	1886	A. Cain	7	75	" " ..
3	Mud Island.	1887	J. Pitman		80	.....
4	Seal Island.....	1880	H. Hitchens....	7	250	\$100 each of crew per annum.
Atlantic Coast—						
5	Clark's Harbour	1900	J. M. Kenny...	7	75	\$1.50 per drill, and extra when saving life.
6	Blanche.....	1895	W. A. B. Smith.	7	75	" " ..
7	Port Mouton.....	1889	J. Frowell . . .	7	75	" " ..
8	Duncan's Cove.	1886	J. W. Holland..	7	75	" " ..
9	Herring Cove.	1885	J. Gorman.....	7	75	" " ..
10	Halifax.	1900				No crew here.
11	Devil's Island.. . . .	1885	G. de Young....	7	75	\$1.50 per drill, and extra when saving life.
12	White Head	1890	H. P. Munroe ..	6	75	" " ..
13	Sable Island....	1885	G. Soderberg.. J. Ritcey.....		250 225	Paid as island staff.....
14	Scatterie Island.....	1885	F. Martell.....	7	75	\$1.50 per drill, and extra when saving life.
Gulf of St. Lawrence—						
15	St. Paul's Island	1885	Supt. Humane Establishment.	3		\$300 each per annum.....
16	Pictou Island.....		Alex. Currie....	7	75	\$1.50 per drill, and extra when saving life.
17	Cape Tormentine	1893	No organized crew.			.....
Great Lakes—						
18	Wellington.....	1883	"			\$1.50 per drill, and extra when saving life.
19	Consecon	1898	W. A. Young...	7	75	" " ..
20	Cobourg.....	1882	D. Rooney.....	7	75	" " ..
21	Port Hope	1889	W. T. Clarke...	7	75	" " ..
22	Toronto Island.....	1883	Wm. Ward.....	7	75	" " ..
23	Long Point...	1902	Geo. Wisner....	7	†75 & 40	\$1.50 per drill, and \$40 per month for three months.
24	Port Stanley.....	1885	Wm. Berry.....	7	75	\$1.50 per drill, and extra when saving life.
25	Point Pelee.....	1900	W. A. Grubb, jr	7	75	\$1.50 per drill, and extra when saving life.
26	Goderich.....	1886	J. R. Craigie . . .	7	75	\$1.50 per drill, and extra when saving life.
27	Collingwood	1885	P. Doherty	7	74	" " ..

Crew at Station permanently for three months during autumn. †\$75 and \$40 per month for three

SESSIONAL PAPER No. 21
by the Dominion Government.

Description of Boat.	Cost.	Where Built.	Equipment.	Remarks.
	\$			
Beebe-McLellan surf-boat, self-bailing 25 feet long.	250	Shelburne, N.S.	Full regulation	Iron rails laid in 1900.
Dobbin's pattern, self-bailing and self-righting, 25 feet long.	575	Dartmouth, N.S.	" ..	
Fishing boats and dories.....	80 pr.an.	.....	Ordinary.....	Kept by contract with fishermen.
Beebe-McLellan boat on east side, surf-boat on west side.	375	Halifax, N.S....	Full regulation	
Beebe-McLellan, self-bailing, 25 feet long, low ends.	250	Shelburne, N.S..	" ..	Boat house and gear cost \$700.
Beebe-McLellan, surf-boat, self-bailing 25 feet long.	250	Dartmouth, N.S.	" ..	New boat in 1901.
Dobbin's pattern, self-righting and bailing 25 feet long.	575	"	" ..	
" ..	575	"	" ..	Lyle gun established here in 1900.
" ..	575	"	" ..	
" ..	375	"	Ordinary.....	This is a spare boat which can be used with volunteer crew when required.
" ..	575	"	Full regulation	
" ..	575	"	" ..	Lyle gun.
Two Dobbin's self-righting and bailing boats and one Beebe-McLellan surf-boat, self-bailing.	1,100	Halifax, N.S....	" ..	Lyle gun and rocket apparatus kept here. Coxswains are under the control of Superintendent of Humane Establishment.
Dobbin's pattern, 25 feet long, self-righting and bailing.	500	Dartmouth, N.S.	" ..	
Beebe-McLellan, self-bailing, 25 feet long, low ends.	250	Shelburne, N.S..	Full equipment	Lyle gun added in 1900.
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Dartmouth, N.S.	" ..	
Boats of winter mail service.....		.....	Ordinary.....	
Dobbin's pattern, self-righting and bailing.	750	Buffalo, N.Y....	Full equipment	Removed from Poplar Point in 1900.
" ..	750	" ..	" ..	Removed from Wellington in 1893.
" ..	575	Goderich, Ont.	" ..	
" ..	620	" ..	" ..	
" ..	600	" ..	" ..	New boat 1895.
Surf boat.	330	Collingwood. . . .	" ..	New station and new boat, 1902.
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Goderich, Ont. . .	" ..	Removed from Pelee Island in 1899.
Surf boat.....	330	Collingwood . . .	" ..	Boat house removed from Point up 200 yards and tramway built.
" ..	330	" ..	" ..	New boat, 1902.
Beebe-McLellan self-bailing surf-boat.	375	" ..	" ..	New boat in 1896.

months while permanently at Station.

APPENDIX No. 10.

STATEMENT of Sick Mariners' Dues collected for the fiscal year ended June 30, 1901.

<i>Quebec.</i>		<i>Nova Scotia—Continued.</i>	
	\$ cts.		\$ cts.
Gasper.....	188 55	Liverpool.....	93 12
Montreal.....	9,741 66	Lockeport.....	17 34
Paspébiac.....	251 00	Lunenburg.....	471 48
Percé.....	79 79	North Sydney.....	1,181 20
Quebec.....	7,267 66	Parrsboro'.....	783 14
Rimouski.....	253 00	Pictou.....	612 24
St. Armand.....	21 42	Port Hawkesbury.....	114 12
St. Johns.....	1,377 20	Port Hood.....	15 66
Stanstead.....	22 22	Shelburne.....	159 92
Three Rivers.....	561 42	Sydney.....	5,444 04
Total.....	19,763 92	Truro.....	1 54
		Weymouth.....	126 46
		Windsor.....	864 96
		Yarmouth.....	479 54
		Total.....	20,767 55
<i>New Brunswick.</i>		<i>Prince Edward Island.</i>	
Bathurst.....	306 80	Charlottetown.....	390 40
Chatham.....	1,277 70	Summerside.....	64 44
Dalhousie.....	895 68	Total.....	454 84
Moncton.....	1,447 38		
Newcastle.....	638 26		
Sackville.....	167 84		
St. John.....	8,323 78		
St. Stephen.....	172 70		
Total.....	13,230 14		
		<i>British Columbia.</i>	
<i>Nova Scotia.</i>		Nanaimo.....	4,148 22
Amherst.....	524 60	New Westminster.....	138 62
Annapolis.....	149 54	Vancouver.....	2,112 04
Antigonish.....	4 74	Victoria.....	5,499 76
Arichat.....	68 83	Total.....	11,898 64
Baddeck.....	13 04	Total.....	66,115 09
Barrington.....	5 30	LESS—Refunds.....	261 26
Canso.....	172 02	Grand total.....	65,853 83
Digby.....	144 44		
Halifax.....	9,192 80		
Kentville.....	127 48		

SESSIONAL PAPER No. 21

APPENDIX No. II

STATEMENT giving Names and Stations of Light Keepers, &c., in the Dominion.
ABOVE MONTREAL.

Name.	Station.	Appointed.	Salary.	
			\$	cts.
Acton, Jas. A.	Burnt Island.....	April 12, 1890..	250	00
Armstrong, John ..	Kaministiquia River.....	" 28, 1894..	200	00
Alexander, Andrew....	Lamb Island.....	May 1, 1897..	400	00
Aitken, James H.....	Stonehouse Point.....	July 25, 1900..	250	00
Allard, Michel.....	Lake St. Louis, Light-ship No. 3..	June 3, 1901..	300	00
Baker, Henry F.....	Clapperton Island.....	Dec. 2, 1895..	350	00
Boyd, Robert P.....	Cole Shoal.....	April 9, 1884..	250	00
Boyd, Wm. S.....	Griffith Island.....	May 14, 1889..	350	00
Butler, Silas L.....	Port Dover.....	July 15, 1897..	300	00
Baxter, Wm. R.....	Brebeuf Island.....	June 6, 1901..	375	00
Beaulieu, Octave....	Point à Cadieux.....	July 26, 1892..	150	00
Boucher, François....	Aylmer, Island.....	Nov. 17, 1882..	175	00
Bamford, Robert.....	Wilson's Channel, Algoma.....	June 21, 1888..	250	00
Bertrand, Felix.....	Lower End Coulonge Lake.....	Mar. 16, 1885..	100	00
Boyd, Wm. M.....	Kagawong.....	April 13, 1893..	72	00
Boyter, A. B.....	Narrow Island.....	Jan. 3, 1898..	250	00
Boyter, David.....	Little Current.....	April 22, 1902..	350	00
Brown, Adam.....	Red Rock, Parry Sound.....	May 25, 1899..	450	00
Ball, J. H.....	Manitoulin Island Light and Fog Alarm	" 7, 1900..	600	00
Black, W. H.....	Kingsville Range.....	July 29, 1902..	150	00
Bratt, James.....	Middle Ground, Pelee Passage.....	Aug. 15, 1902..	400	00
Butchart, Daniel ..	Tobermoray.....	Aug. 28, 1901..	130	00
Campbell, Thos.....	Burlington Beach.....	April 1, 1875..	350	00
Collins, Allen.....	Christian Island.....	Mar. 25, 1891..	*425	00
Cross, Manly R.....	Gananoque Narrows and Jack Straw Shoal....	Aug. 25, 1896..	480	00
Campbell, Robert.....	Goderich.....	June 9, 1886..	400	00
Currie, Geo.....	Isle of Coves.....	April 1, 1878..	650	00
Craig, Wm.....	Thunder Cape.....	May 17, 1892..	600	00
Cook, Seldon B.....	Long Point Light and Fog Alarm.....	June 9, 1897..	700	00
Campbell, John.....	McTavish Point.....	Nov. 18, 1896..	100	00
Clark, Arthur Geo....	Nottawasago Island.....	July 5, 1890..	500	00
Crevier, Dolphis....	Pointe Claire.....	May 11, 1888..	200	00
Cartier, H. J.....	River Thames.....	Oct 19, 1884..	425	00
Cooper, John.....	Port Arthur.....	" 14, 1882..	300	00
Cosgrove, George....	Victoria Island, Lake Superior.....	Nov. 14, 1889..	350	00
Columbus, Christopher...	Penetanguishene and Whiskey Island.....	Mar. 18, 1893..	300	00
Conover, Forrest H. C...	Leamington.....	April 14, 1883..	150	00
Cox, John.....	Morrison's or Hawley's Island.....	June 22, 1887..	100	00
Chabot, Joseph.....	Papineauville Range Lights.....	" 17, 1897..	100	00
Connors, Frank.....	Point Pleasant.....	Oct. 13, 1898..	200	00
Chase, H. J.....	Weller's Bay.....	Nov. 4, 1898..	150	00
Crespin, Vital.....	Lake St. Louis, Light-ship No. 2	June 3, 1901..	300	00
Cree, James J	Middle Ground, Pelee Passage.....	Sept. 3, 1902..	300	00
Daviaux, Joseph.....	Corbay Point, Batchewana.....	May 27, 1890..	350	00
Durnan, George.....	Gilbrialtar Point.....	" 31, 1854..	625	00
Daviaau, Hyacinthe....	Michipicoten Island.....	July 1, 1881..	400	00
Doaust, Dosithée.....	McKie's Point.....	Sept. 22, 1893..	175	00
Davis, John H	Pidgeon Island.....	May 16, 1896..	350	00
Dick, Andrew.....	Point Porphyry	Aug. 10, 1880..	400	00
Dutcher, Samuel.....	Meaford.....	May 7, 1877..	150	00
Darling, Thomas.....	Nipissing, South-east Bay Beacon Light ..	July 1, 1890..	66	00
Dixon, Joseph G.....	Lake Rosseau.....	" 21, 1890..	100	00

*Allowance \$10 †Allowance \$100.

2-3 EDWARD VII., A. 1903

STATEMENT giving Names and Stations of Light-keepers, &c.—Continued.

ABOVE MONTREAL—Continued.

Name.	Station.	Appointed.	Salary.
			\$ cts.
Dempsey, J. Frank.	Potter's Island Pole Light	June 14, 1892..	10 00
Demers, Wilbrod	Caribou Island, Lake Superior.	May 10, 1899..	800 00
Ead, Mrs. C	Port Stanley.	Aug. —, 1890..	300 00
Felan, Maurice	Oakville Pier	April 28, 1894..	150 00
Fortier, David H. A	Port Colborne Range Lights and Fog Alarm.	" 11, 1865..	550 00
Fellowes, W. R.	Rondeau Harbour.	Dec. 18, 1888..	350 00
Filiatreault, Thomas	Coteau Landing.	May 27, 1890..	140 00
Fraser, John.	Wind Mill Point	Dec. 13, 1901..	180 00
Fortier, Theodore.	Middle Ground-Pelee Passage	Sept. 31, 1902..	250 00
Grignon, Xavier	Beauharnois.. . . .	Mar. 16, 1885..	†200 00
Gloude, Benjamin.	Pointe Claire.	Sept. 7, 1872..	300 00
Gillespie, Wm.	Wolfe Island.	Mar. 16, 1885..	250 00
Gauthier, Charles.	St. Placide	May 1, 1874 . . .	140 00
Gordon, Robert.	Cobourg Pier.	" 16, 1883..	180 00
Griffith, Alfred H.	Giant's Tomb.	Sept. 17, 1898..	250 00
Gorley, John, jr.	Manitowaning.. . . .	July 3, 1900..	150 00
Gilbert, Philip.	Warton Pole Light	Sept. 5, 1902..	75 00
Hackett, Mrs. A.	Bois Blanc.	June 27 1901..	435 00
Hudgins, James M	False Ducks.	April 28, 1894..	350 00
Hamilton, John.	Hamilton's Island.	Sept. 3, 1873..	130 00
Hill, Thomas H.	Lancaster Pier	July 1, 1877..	325 00
Haitze, Jean	Lonely Island.	May 11, 1885..	450 00
Hunter, David.	Port Dalhousie.	Oct. 29, 1879..	350 00
Hawkins, David B.	Peninsula Harbour.	Aug. 31, 1891..	400 00
Harvey, James	Thessalon.	Nov. 22, 1897..	250 00
Hughes, Wm.	Red River Range Lights.	—, 1885..	250 00
Hamilton, Thos.	Pie Island, Port Arthur.	April 15, 1899..	75 00
Humes, David.	Stribling Point Range Lights.	Sept. 1, 1902..	180 00
Johnson, Isaac S	Cherry Island.	Nov. 5, 1883..	300 00
Jeffrey, Carson.	Nigger Island Shoal.. . . .	April 28, 1894..	200 00
Kinney, James	Gore Bay	July 27, 1895..	350 00
Kennedy, James.	Allumette Island.	May 23, 1887..	100 00
Lambert, Wm. McGregor. . . .	Chantry Island.	Oct. 1, 1880..	500 00
Labelle, Louis	Deep River Island	May 5, 1897..	100 00
Lamcrendière, Pierre Ré- gis de.	Killarney	Sept. 24, 1880..	400 00
Léger, Thomas.	Lachine Pier.	July 14, 1897..	250 00
Lamondin, Louis.	Byng Inlet.	" 30, 1901..	375 00
Lee, John	Southampton	Oct. 7, 1882..	150 00
Lockerbie, Andrew.	Collingwood Harbour	May 4, 1883..	300 00
Low, Robert	Thornbury.	April 12, 1887..	80 00
Lowry, Robert M.	Port Elgin.	Mar. 14, 1896..	80 00
Lunsden, A.	Lake Temiscamingue Lights.	Oct. 6, 1890..	250 00
Lidwill, John R.	Pelee Island	July 10, 1899..	300 00
Lawson, Colin P.	Middle Island	Oct. 17, 1898..	240 00
Lamdon, John A.	Spectacle Shoal and Red Horse Rock.. . . .	Nov. 27, 1901..	300 00
Lacroix, H.	Oka . . . . .	. . . . .	. . . . .
Leroux, Moses.	St. Francis Middle Ground.	May 21, 1902..	100 00
Laberge, Albert.	Green Shoal.	" 20, 1902..	200 00
Mullin, Michael.	South River, Muskoka.	May 8, 1900..	80 00
Munroe, John Jacob.	Lancaster Bar	June 8, 1892..	300 00
Moreland, F.	Nine Mile Point.	April 1, 1895..	200 00
Masson, Lucas H.	Pointe aux Anglais.	Sept. 4, 1897..	200 00
Mongeon, Charles A	Way Shoal.	May 23, 1887..	100 00
Matheson, Norman.	Cape Robert, Algoma	Oct. 7, 1896..	350 00
Miller, John.	Port Crédit	Dec. 16, 1897..	150 00
Morrisseau, Jonathan.	Hooper's Point.	Mar. 24, 1898..	150 00

* Per month while light in operation. † Allowance for assistant, \$60.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—Continued.

ABOVE MONTREAL.—Continued.

Name.	Station.	Appointed.	Salary.	
			\$	cts.
Manson, John.....	Colchester Reef.....	June 9, 1886..	600	00
Morrisseau, Michael.....	Rainy River, Algoma.....	June 9, 1886..	*250	00
Martin, Wm. J.....	Spanish River.....	July 5, 1890..	250	00
Miron, Louis.....	Gargantua.....	Oct. 26, 1889..	450	00
Murray, Wm.....	Barryfield Range Lights.....	May 17, 1900..	150	00
Montgomery, Wm.....	Toronto Harbour, Eastern Channel.....	Oct. 16, 1895..	300	00
Matheson, Daniel.....	Black Bear Island, Manitoba.....	June 22, 1889..	150	00
Magnusson, August.....	Gull Harbour, Lake Winnipeg.....	Sept. 19, 1898..	150	00
Mallette, B.....	Lake St. Louis Lightship No. 1.....	April 30, 1901..	250	00
Masson, F. E.....	Long Point, West End.....	June 3, 1901..	400	00
Manders, Samuel.....	Paquet, Rapids.....	July 26, 1901..	100	00
Martin, Edward.....	Michael's Bay.....	June 3, 1902..	120	00
Michigan Land & Lumber Co.....	Blind River.....	Sept. 8, 1900..	80	00
McKillop, John.....	Campbell's Island.....	April 2, 1892..	150	00
McIntosh, John.....	Arnprior Island.....	" 2, 1892..	150	00
McKenzie, John.....	Presqu'Isle.....	July 14, 1873..	100	00
McDonald, Murdock.....	Point Clark.....	Jan. 8, 1897..	375	00
McDonald, Amos.....	Salmon Point.....	July 12, 1897..	300	00
McKillop, Donald.....	St. Anicet Shoal.....	June 8, 1892..	230	00
McLaren, Allan J.....	Brown's or Knapp's Point.....	Feb. 11, 1896..	180	00
McKay, Chas. S.....	Battle Island.....	Aug. 27, 1877..	500	00
McIntosh, Daniel.....	South Bay Point.....	Oct. 1, 1881..	200	00
McKenzie, Wm.....	Strawberry Point.....	May 17, 1893..	300	00
McQuestion, Mrs. Maria..	McQuestion Point.....	June 9, 1886..	100	00
McAulay, Donald.....	Saugeen River.....	Mar. 16, 1899..	80	00
McDonald, Lauchlin, D...	Mississagua Island.....	May 16, 1896..	450	00
McCool, James.....	Fort William Beacon Light, Ottawa River.....	" 23, 1887..	90	00
McDavitt, Chas.....	Point au Baril.....	Mar. 1, 1897..	300	00
McKay, John.....	Lyal Island.....	Oct. 27, 1884..	450	00
McLean, Arch.....	Owen Sound.....	Dec. 23, 1897..	126	00
McGaw, Thos.....	Kincardine.....	June 13, 1899..	375	00
McDougall, Neil.....	Squaw Island.....	April 25, 1901..	150	00
McKinnon, R. F.....	Point aux Pins.....	Mar. 20, 1902..	250	00
Onellette, Godfrey.....	Buckam's Point.....	May 1, 1884..	180	00
O'Brien, Matthew.....	Frenchman's Bay.....	Oct. 13, 1898..	125	00
O'Conner, P.....	Bishop's Bay, Algoma.....	April 13, 1899..	150	00
Purvis, John.....	Great Duck Island Light and Fog Alarm.....	Mar. 9, 1898..	†500	00
Pettypiece, Stephen.....	Line Kiln Crossing.....	May 11, 1888..	350	00
Prosser, John.....	Muskoka or Fox Island.....	Sept. 14, 1896..	250	00
Plunket, H. E.....	Swampy Island, Lake Winnipeg.....	Oct. 12, 1884..	350	00
Proudfoot, Thos.....	Neebish, St. Mary's River.....	Nov. 4, 1898..	100	00
Root, Albert.....	Grenadier Island.....	Dec. 15, 1863..	250	00
Roddick, Robert.....	Gull Island.....	Mar., 1872..	500	00
Rowe, Geo. Albert.....	Telegraph Island.....	Oct. 25, 1895..	200	00
Robillard, Honoré.....	Isle Perrot.....	Jan. 25, 1897..	100	00
Redmond, William H.....	Gravenhurst Narrows.....	June 18, 1894..	100	00
Rains, Evan.....	Shoal Point, Algoma.....	Nov. 24, 1884..	250	00
Rains, A. M.....	Sailor's Encampment.....	Aug. 1892..	† 7	00
Rains, W. W.....	Westfield Range Light.....	" 1892..	† 7	00
Ritchie, James.....	South Bay Range Lights.....	" 20, 1898..	150	00
Rowan, James.....	Victoria Island, Galetta.....	Dec. 3, 1898..	100	00
Richardson, Wm. J..	Michipicoten Hr., Algoma.....	Sept. 27, 1900..	200	00
Richardson, Thos. J. ..	Western Islands Light and Fog Alarm.....	June 27, 1901..	700	00
Robidou, Alex.....	Cornwall Dyke (St. Regis).....	May 31, 1902..	100	00
Richmond, John A.....	Snug Harbour.....	Oct. 7, 1902..	350	00
Sommers, Napoleon.....	Midland Range Lights.....	June 19, 1900..	150	00
Shannon, William.....	Gross Point.....	Sept. 27, 1866..	**425	00
Shannon, George.....	Assistant.....	" 27, 1866..	175	00
Seguin, Grégoire.....	L'Orignal.....	May 8, 1894..	100	00

*Allowance \$30.
light in operation.

+ Allowance for assistant, \$200, attending Fog alarm.
** Allowance \$10.

‡ Per month while

STATEMENT giving Names and Stations of Light-keepers, &c. —Continued.

ABOVE MONTREAL—Continued.

Name.	Station.	Appointed.	Salary.	
			\$	cts.
Smithers, R. O.....	Mohawk Island.....	Mar. 31, 1896..	400	00
Sutherland, Jno.....	Port Burwell.....	June 18, 1894..	225	00
Schofield, Fergus.....	Port Maitland.....	April 10, 1871..	350	00
Simpson, Hedley V.....	Presqu'Isle Range Lights.....	May 11, 1888..	540	00
Smith, H. E.....	Presqu'Isle, Main Light.....	April 29, 1898..	350	00
Shepperd, Mrs. Wm., acting keeper.....	Sulphur Island, Range Light.....	Aug. —, 1890..	300	00
Sullivan, Silas.....	Baskin's Wharf.....	Dec. 22, 1896..	130	00
Sauvé, Honoré.....	Caron's Point.....	Feb. 16, 1889..	60	00
Stoneburner, John A.....	Cornwall Canal, upper entrance.....	April 12, 1890..	100	00
Smith, Donald.....	Flower Pot Island.....	Nov. 8, 1897..	300	00
Spencer, D. O.....	Scotch Bonnet.....	Aug. 8, 1898..	350	00
Scott, Guy J.....	Point Peter, Light and Fog Alarm.....	June 6, 1901..	650	00
Scott, Wm. J.....	Corunna, Range Lights.....	April 23, 1901..	120	00
Stacker, Jos. L.....	Ste. Anne de Bellevue.....	May 20, 1902..	125	00
Sweeney, Thomas.....	Tomahawk Island.....	Sept. 19, 1902..	150	00
Taylor, Ross.....	Stag Island, River St. Clair.....	July 13, 1900..	150	00
Taylor, Edward.....	Parry Sound, Range Lights.....	June 3, 1901..	350	00
Tebo, Joseph.....	North Sister Rock.....	May 20, 1902..	350	00
Veeech, Stannes.....	Nine Mile Point : light-keeper and engineer of fog alarm.....	Mar. 7, 1894..	450	00
Valee, Charles.....	Hope Island.....	April 20, 1899..	450	00
Wallace, John G.....	Lindoe Island.....	July 1, 1881..	250	00
Winthrop, Robert W.....	Head of Dechêne Rapids.....	April 13, 1891..	100	00
Wootton, Edward.....	Niagara, Fog Bell.....	July 11, 1887..	50	00
Webster, Chas.....	Cabot's Head, Light and Fog Alarm.....	May 10, 1898..	650	00
Whitmarsh, John.....	Snake Island.....	July 18, 1900..	350	00
Weir, John C.....	Belleville.....	April 4, 1901..	200	00
Wemp, Daniel.....	Centre Brother Island.....	Jan. 9, 1901..	200	00

BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC.

Arcand, Elzéar.....	Cap de la Madeleine ..	May 17, 1892..	80	00
Arcand, Alfred.....	Seven Island.....	" 20, 1898..	500	00
Ascah, James.....	Fame Point, Gaspé Co ..	Sept. 2, 1880..	700	00
Bertrand, Louis.....	Champlain Pole Light ..	" 12, 1902..	60	00
Beaudet, Fulgence.....	Lotbinière (1).....	June 1, 1895..	80	00
Beaudet, George.....	Lotbinière (2).....	Jan. 4, 1883..	80	00
Beaudet, Charles.....	Platon.....	Aug. 24, 1894..	+120	00
Bourque, Peter.....	Bird Rocks ..	Nov. 27, 1896..	1,300	00
Bouilliane, Pierre.....	Lark Islet.....	Sept. 1, 1872..	200	00
Bertrand, Auguste.....	Macquereau Point.....	Dec. 21, 1877..	300	00
Banville, Joseph.....	Matane.....	Feb. 1, 1897..	‡250	00
Bourget, F.....	Percé Roadstead.....	Mar. 18, 1893..	200	00
Breton, Narcisse.....	Point Rich ..	May 16, 1896..	500	00
Bourget, Charles.....	Cape Despair.....	Nov. 1, 1897..	\$400	00
Bisson, Wm.....	Grand River.....	Oct. 22, 1896..	\$150	00
Bergeron, George.....	River Valee.....	June 16, 1885..	70	00
Bouchard, Louis.....	Cap au Saumon, Lighthouse and Fog Alarm.....	May 16, 1896..	600	00
Beaulieu, Jos. Hudon dit.....	Pointe aux Originaux ..	April 7, 1875..	250	00
Boucher, Louis.....	Isle aux Raisins.....	" 13, 1898..	240	00
Bélanger, H.....	St. Thomas Wharf.....	" 4, 1898..	80	00
Bujold, Louis.....	Carleton Point.....	May 25, 1899..	250	00
Boisvert, Alcide.....	Cape Charles.....	July 23, 1901..	150	00
Baron, Amedee.....	Cap Charles.....	June 26, 1901..	70	00
Bouchard, Geo.....	St. Irenée ..	Aug. 31, 1901..	40	00
Bourget, Félix.....	Verchères Village (Back).....	April 21, 1902..	70	00

* Allowance \$25.

† Has also charge of Back Rock Range Light at \$5 per month.

‡ Allowance \$100.

§ Allowance \$30.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC—*Continued.*

Name.	Station.	Appointed.	Salary.
			\$ cts.
Bergeron, Nap....	St. Antoine de Tilly.....	Mar. 21, 1902..	80 00
Bordua, Philéas.....	Ile Deslauriers.....	April 21, 1902..	120 00
Bourdages, Louis.....	Point Eschourie.....	Oct. 7, 1902..	60 00
Carignan, L. P.....	Champlain Main Light.....	" 1, 1892..	80 00
Cotnam, Wm.....	Amherst Island.....	April 26, 1871..	*300 00
Colton, P. J.....	Belleisle.....	" 1, 1882..	1,100 00
Côté, Luc.....	Cape Chatte.....	Dec. 3, 1901..	‡300 00
Campbell, John W.....	Cape Norman, Lighthouse and Fog Alarm ..	April 12, 1890..	720 00
Costin, Eugène.....	Cape Rosier.....	Nov. 4, 1890..	800 00
Chamberlain, H.....	Oak Point, Range Lights.....	April 19, 1900..	75 00
Collins, Geo. F.....	Entry Island.....	Feb. 28, 1901..	250 00
Chenel, John.....	Grand Entry, Mag. Island.....	July 4, 1901..	50 00
Chabot, Edouard.....	Pointe St. Laurent.....	Aug. 1, 1880..	300 00
Chiasson, Edward.....	Etang du Nord.....	Oct. 22, 1896..	350 00
Croteau, Téléphore.....	St. Croix, Front Range.....	Mar. 28, 1901..	70 00
Chicoine, F. Xav.....	Verchères Traverse (front).....	April 21, 1902..	80 00
Charbonneau, Phileas.....	" " (back).....	April 21, 1902..	70 00
Dubreuil, Hector.....	Pointe aux Trembles.....	Feb. 18, 1897..	130 00
Desmarais, Phileas.....	River St. Francis.....	July 2, 1897..	\$20 00
Duperie, Alfred J.....	Pointe aux Jones.....	May —, 1873..	40 00
Dubois, Octave.....	Flower Island, Strait of Belle Isle.....	Oct. 14, 1899..	500 00
Demers, Alphonse.....	Pointe à Basil.....	Feb. 6, 1901..	100 00
Danville, Elzéar.....	".....	" 6, 1901..	100 00
Doré, François.....	St. Antoine Lotbinière.....	Mar. 21, 1902..	120 00
Electric Light Company ..	Roberval Beacon Light (2).....	June —, 1898..	60 00
Fournier, Alfred.....	Upper Traverse.....	April 14, 1900..	600 00
Fugère, Léandre.....	Batiscau (1).....	" 19, 1868..	80 00
Fugère, Napoléon.....	" (2).....	Jan. 10, 1887..	80 00
Fiset, Jean H.....	Lake St. Peter Light-ship No 2.....	April 22, 1875..	500 00
Fontaine, Edouard.....	Cape Bauld Lighthouse and Fog Alarm.....	Nov. 1, 1892..	800 00
Faffard, Victor.....	Pointe de Monts.....	Aug. 1, 1889..	||400 00
Fraser, Pierre T.....	Red Island.....	April 12, 1890..	*450 00
Fagot, George.....	Greenly Island Lighthouse and Fog Alarm..	June 30, 1890..	800 00
Ferland, Nap.....	St. Petronille.....	Sept. 3, 1901..	150 00
Gervais, Ovila.....	Contrecoeur (1).....	Mar. 1, 1877..	100 00
Giguère, Denis.....	Lavaltrie.....	April 24, 1870..	300 00
Galibois, Jean B.....	Bellechasse.....	June 23, 1880..	320 00
Goudreault, Jos. M.....	River Caribou.....	—, 1874..	40 00
Gauthier, Francis.....	Pointe aux Jones.....	April —, 1872..	40 00
Goudreault, Abraham.....	Eboulements Pole Light.....	May 10, 1882..	40 00
Grenier, Solomon.....	Newport.....	June 3, 1897..	120 00
Guyon, Joseph.....	Verchères Village (front).....	April 21, 1902..	80 00
Gilbert, F. E.....	Rivière du Loup (wharf).....	Sept. 22, 1902..	70 00
Hébert, Moise M.....	Cap de la Madeleine.....	May 11, 1888..	80 00
Harvey, André.....	Chicoutimi Wharf.....	" 30, 1889..	40 00
Huot, Joseph.....	L'Ange Gardien.....	Aug. 1, 1885..	70 00
Heroux, Didié.....	Lake St. Peter Light-ship No. 3.....	April 13, 1898..	400 00
Irvine, John.....	Red Island Light-ship.....	Mar. 2, 1900..	**500 00
Kennedy, Thomas.....	Gaspé Light-ship.....		
Lafèche, Désiré.....	Lake St. Peter Light-ship No. 1.....	April 12, 1887..	400 00
Lachapelle, Jean B.....	Repentigny (2).....	Feb. 1, 1861..	75 00
Langlois, Antoine.....	River du Chêne.....	July 11, 1888..	100 00
Laliberté, Arthur.....	Ste. Emelie, Front Range.....	Sept. 24, 1880..	70 00
Lebel, Esdras.....	Lower Traverse Light-ship.....	April 21, 1900..	2,300 00

* Has allowance of \$50 for fuel, &c. ‡ Allowance \$200. || \$200 for attending signal gun, &c.
 § Per month. ** Allowance, \$1,900.

2-3 EDWARD VII., A. 1903

STATEMENT giving Names and Stations of Light-keepers, &c.—Continued.
BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC—Continued.

Name.	Station.	Appointed.	Salary.
Leclerc, P. M.	Ste. Emelie, Back Range.....	April 8, 1899..	80 00
Lavoie, M.	St. Fulgence.....	—, 1893..	70 00
LeHuguet, François.	Gaspé Cape.....	Oct. 22, 1896..	650 00
Lindsay, Wm.	Gaspé Wharf.....	June 14, 1900..	42 00
Lindsay, Irénée.....	Green Island.....	Sept. 25, 1888..	650 00
Loisel, John.....	Pointe Paspébiac.....	Aug. 27, 1894..	150 00
LeBlanc, Régis.....	White Island Light-ship.....	Jan. 11, 1878..	*500 00
Lemieux, Z.....	South-west Point, Anticosti.....	July 19, 1900..	600 00
Lachance, Louis.....	Port of St. Johns.....	Sept. 26, 1896..	300 00
Leclerc, Geo.	Pillars—Algernon Rock.....	July 30, 1901..	650 00
Lavoie, F.....	Anse St. Jean Wharf.....	—, 1889..	40 00
Levesque, Arthur.....	Kamouraska.....	Feb. 19, 1901..	400 00
Leclerc, Auguste.....	Martin River.....	Sept. 3, 1902..	300 00
Mousseau, François.	Port St. Francis.....	Mar. 27, 1900..	†30 00
Montplaisir, Antoine B....	Cap de la Madeleine.....	Aug. 6, 1877..	175 00
Mercier, O.	Isle à la Bague.....	" 31, 1883..	250 00
Malo, Joseph.....	Isle Ste. Thérèse (1).....	Feb. 1, 1897..	130 00
Ménard, Denis.....	North of Halfway Point.....	Sept. 12, 1890..	170 00
Marchand, Ferdinand.	Point aux Citrouilles.....	April 27, 1896..	200 00
Martin, Paul.....	St. Valentine.....	April 28, 1873..	150 00
Molson, Mrs. Alexander....	Molson's Island, Lake Memphremagog.....	From year to year	‡2 50
Malouin, Alfred.....	Anticosti, West Point.....	July 1, 1877..	§450 00
Martin, Jules G.....	Little Metis.....	Dec. 23, 1879..	||300 00
Marceau, Louis.....	St. Francis.....	April 1, 1884..	75 00
Maltais, Eli.....	Murray Bay.....	May 10, 1882..	50 00
Mayrand, Eugene.....	Grondines (2).....	May 28, 1901..	100 00
Morin, Hypolite.....	Pilgrims.....	April 29, 1898..	340 00
Marcotte, P. L.....	Point Bleue, Lake St. John.....	Nov. 28, 1898..	40 00
McWilliams, John J.....	Father Point.....	June 1, 1876..	200 00
McLaren, Donald.....	River du Moulin.....	Sept. 19, 1889..	35 00
McInnis, George.....	Port Daniel.....	Oct. 7, 1902..	60 00
Noel, Edouard.....	Richelieu Light, Lotbinière.....	April 10, 1899..	150 00
Pelletier, Tancrede.....	Egg Island.....	July 1, 1901..	500 00
Paquin, Sylva.....	Point du Lac.....	May 2, 1900..	100 00
Paul, Edouard.....	Isle de Grace.....	Sept. 7, 1871..	**30 00
Page, Celestin.....	L'Islet Richelieu.....	Jan. 9, 1895..	150 00
Peters, D. E.....	Witch Rock, Lake Memphremagog.....	Oct. 31, 1901..	‡4 00
Peters, J. H.....	Green Point.....	From year to year	‡1 50
Patterson, J. C.....	Wadleigh.....	" "	‡1 50
Painchaud, Joseph.....	Crane Island.....	Oct. 1, 1864..	320 00
Paquet, Pierre.....	St. Famile.....	" 19, 1885..	70 00
Poitras Alexander.....	Bersmis Range Light.....	Sept. 21, 1891..	100 00
Pedneau, Pierre.....	Isle aux Coudres Pole Light.....	April 6, 1896..	40 00
Poulin, Alfred.....	St. Famille.....	" 26, 1898..	70 00
Pineault, Louis.....	Bicquet Lighthouse and Fog Alarm.....	Oct. 6, 1900..	700 00
Perrault, Henri.....	St. Pierre les Becquets.....	May 28, 1901..	70 00
Provonsil, E. M.....	Ash and Bloody Island.....	Mar. 1, 1902..	200 00
Quinn, Thos.....	Georgeville.....	May 23, 1902..	\$1.50 per wk.
Reeves, Samuel.....	Isle Ste. Thérèse (2).....	Oct. 12, 1870..	270 00
Rivet, Léon L.....	Repentigny (1).....	April 28, 1894..	75 00
Richard, Alphonse.....	Brandy Pots.....	Oct. 7, 1878..	400 00
Rennie, E. H.....	Cape Ray Lighthouse and Fog Whistle.....	" 19, 1884..	800 00
Roberge, C. Honoré.....	St. Pierre Island.....	" 19, 1885..	70 00
Rodrique, F. F.....	Portneuf.....	Jan. 22, 1858..	275 00
Racette, D.....	St. Croix back range lights.....	Feb. 10, 1900..	70 00
St. Onge, Thomas.....	Contrecoeur.....	June 14, 1886..	75 00
Salvail, Omer.....	Isle à la Pierre.....	May 6, 1897..	220 00

* Allowance, \$2,300. † A month during season of navigation. ‡ Per week. § Allowance
\$250. || Allowance, \$20 for fuel and \$20 for horse. ** Per month.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*
BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC—*Continued.*

Name.	Station.	Appointed.	Salary.
			\$ cts.
Simard, Edward.....	Montée du Lac, and Cape Rouge Beacons.....	Oct. 28, 1870..	400 00
Sasseville, F. J.....	Cape Magdalen, Lighthouse and Fog Whistle..	June 9, 1886..	700 00
Simard, Arthur.....	River Caribou	" 9, 1870..	40 00
St. Croix, George.....	Plateau Rock.....	Oct. 22, 1896 ..	400 00
Savard, Jno.....	River Caribou.....		40 00
Simard, H	St. Anne de Chicoutimi.....		40 00
Trottier, Widow I.....	Grondines (1).	Aug. 1, 1872..	100 00
Thurber, Mrs. Wm.....	Ste Croix.....	March 28, 1901..	175 00
Tremblay, W. T.....	Goose Cape	April 4, 1888..	250 00
Tremblay, Dorilas.....	Portneuf (2)	Feb. 18, 1875..	350 00
Tremblay, George.....	River du Moulin	Sept. 9, 1889..	35 00
Trudelle, Ambroise.....	L'Ange Gardien	Oct. 19, 1885..	70 00
Tremblay, Pitre.....	St. Alphonse Wharf.....	June 19, 1895..	40 00
Tremblay, Henry.....	Cape l'Aigle Pole Light.....	Feb. 6, 1896..	40 00
Tremblay, Thomas.....	Bay St. Paul	Oct. 25, 1898..	250 00
Tremblay, P. E.....	Harbour Light Rivière du Loup.....	May 19, 1900..	70 00
Tremblay, Alexis.....	Heath or East Point, Anticosti	July 25, 1900..	600 00
Trudeau, Thadée.....	Isle Ste Therèse	April 21, 1902..	80 00
Vigneau, Placide.....	Perroquet Island.....	Sept. 19, 1892..	600 00
Vézina Oliver.....	St. Pierre.....	Oct. 28, 1897..	70 00
Whitman, Robert H	Lacolle	May 14, 1883..	150 00
Wheeler, W.....	Lead Mines, Lake Memphremagog	From year to year	*1 50
Wyatt, Thomas.....	Forteau Lighthouse and Fog Whistle.....	Oct. 18, 1889..	†800 00

NEW BRUNSWICK.

Arseneau, James.....	Dalhousie	Jan. 18, 1894..	100 00
Archer, Wm.....	North Tracadie	Nov. 7, 1872..	275 00
Allain, Joseph.....	Hay Island, Beacon Light.....	May 21, 1895 ..	150 00
Balmer, Matthew.....	Oak Point.....	April 27, 1900..	80 00
Barbour, Jas. G.....	Cape Enrage Lighthouse and Fog Signal	May 11, 1888..	800 00
Bent, A. J. Percy.....	Cape Jourimain or Cape Tormentine.....	Jan. 25, 1901..	300 00
Blacklock, Fred. G.....	Cape Spencer.....	Mar. 5, 1888..	400 00
Brown, Charles.....	Quaco	Nov. 25, 1884..	400 00
Bradshaw, L. B.....	Quaco Fog Alarm.....	Sept. 3, 1887..	400 00
Brune, John David.....	Goose Lake	May 11, 1888..	‡250 00
Boudreau, Jos. B.....	Petit Rocher.....	Feb. 26, 1896..	150 00
Blakley, Lawrence.....	Harper's Point.....	Sept. 9, 1887..	75 00
Bellmore, Fredk.....	Dipper Harbour	Mar. 12, 1895..	100 00
Belleveau, Philip T.	Folly Point.....	Nov. 29, 1897..	175 00
Cochran, Fredk. M.....	St. Martin's Wharf, Quaco	Mar. 25, 1892..	100 00
Conley, John C.	Beaver Harbour.....	April 2, 1892..	250 00
Cummings, Geo.....	Campbellton Beacon Light	Jan. 1, 1880..	100 00
Chapman, James.....	Baie du Vin Island.....	July 24, 1882..	200 00
Crandall, D. H.....	Grays Point Pole Light.	April 12, 1900..	70 00
Carney, John	Perry Point.....	Sept. 25, 1900..	80 00
Copp, Ed. J.....	Anderson's Hollow.....	Jan. 14, 1901..	100 00
Cormier, Jadus P.	Buctouche Sand Bar	July 26, 1902..	200 00
Dixon, Elias C.....	Pea Point	Nov. 16, 1898..	250 00
Delaney, John.....	Grant's Beach	Oct. 7, 1880..	125 00
Drake, Jeremiah.....	St. John Signal Station	Mar. 24, 1881..	650 00
Dalzell, Geo. Y.....	Swallow Tail	18, 1893..	400 00
Dinsmore, Samuel G.....	Big Duck Island Fog Alarm.....	July 5, 1886..	550 00
DeGrace, John.....	Indian Point.....	June 4, 1889..	150 00
Davidson, Warren P.....	Southern Wolves.	Jan. 14, 1897..	500 00
Day, W. A.....	Belyea's Point	Sept. 20, 1899..	90 00

Per week. † Allowance, \$75. ‡ Allowance, \$12.

2-3 EDWARD VII., A. 1903

STATEMENT giving the Names and Stations of Light-keepers, &c.—Continued.

NEW BRUNSWICK.—Continued

Name.	Station.	Appointed.	Salary.
Egan, Edward	Bellonie's Point.....	May 17, 1892	100 00
Frawley, Frank.....	Point Lepreau Fog Alarm.....	June 15, 1898..	450 00
Flewelling, M.....	Flewelling's Wharf.....	April 12, 1890..	80 00
Fanjoy, William.....	Fanjoy's Point.....	Dec. 15, 1897	80 00
Ferguson, W. G.....	South Tracadie Gully.....	Mar. 23, 1898..	150 00
Guptill, S. N.....	Grand Harbour.....	Oct. 24, 1900.	400 00
Gillard, John.....	Point DuChene Range Lights.....	June 13, 1888..	90 00
Gillespie, David.....	Hillsborough Pier.....	Dec. 31, 1892..	75 00
Gould, Francis T.....	Point Brule Range Lights, Shediac.....	{ Jan. 13, 1889) April 3, 1900 }	40 00
Hendry, A. M.....	Hendry Farm.....	" 25, 1899..	80 00
Hayden, Michael.....	Pokemouche.....	Oct. 17, 1888..	200 00
Henderson, Arthur.....	Midjie Bluff.....	" 5, 1894	200 00
Hamm, Chas. P.....	Musquash.....	Jan. 14, 1879..	300 00
Helms, Geo.....	Petit Passage Fog Whistle.....	May 5, 1882..	400 00
Hachey, Octave.....	Pokesudie Island.....	July 12, 1881..	180 00
Hagan, E.....	Ward's Point.....	April 12, 1890..	80 00
Harvey, W. L.....	Gannet Rock.....	May 20, 1898..	700 00
Hannah, Mrs. B.....	Spruce Point.....	Sept. —, 1892..	120 00
Ingals, Turner.....	S. W. Head, Seal Cove.....	Dec. 4, 1900..	500 00
Ingersoll, Colin J.....	Machais, Seal Isd. Light house and Fog alarm..	" 30, 1901..	1,000 00
Kilpatrick, Joseph.....	Passamaquoddy Bay.....	Feb. 3, 1898..	350 00
Lantaigne, Gervais.....	Caraquet Island.....	June 16, 1888..	200 00
Leblanc, Charles P.....	Cassie's Point.....	May 4, 1872..	250 00
Looney, Thos. E.....	Greenhead, St. John River.....	Oct. 14, 1896..	200 00
Mills, George.....	Lower Fox Island.....	June 23, 1897..	200 00
Morrison, Peter.....	Oak Point.....	" 24, 1882..	100 00
Morrison, Peter, jr.....	Portage Island.....	July 1, 1892..	200 00
Morrison, Duncan.....	Sheldrake Island.....	Feb. 25, 1880..	300 00
Maillet, D. O.....	Indian Point, Buctouche.....	July 7, 1883..	150 00
Matheson, R. B.....	Newcastle.....	April 18, 1898..	100 00
Murray, Michael.....	Middle Island.....	" 10, 1902..	200 00
McLaren, William.....	St. John Harbour.....	June 8, 1901..	350 00
McLeod, J. H.....	Bliss Island.....	Oct. 17, 1900..	300 00
McLennan, Kenneth.....	Escuminac Lighthouse and Fog Whistle.....	March 7, 1892..	750 00
McIntosh, Chas.....	Neguac Range Lights.....	Dec. 19, 1892..	100 00
McBaine, Alex.....	Cox's Point.....	May 6, 1898..	80 00
McMonagle, Miles.....	Oromocto Shoals.....	" 26, 1891..	80 00
McDonald, R. P.....	Musquash Island.....	Jan. 28, 1901..	80 00
McMann, Robert Harvey.....	McMann's Point.....	Nov. 2, 1901..	80 00
McNeil, Henry H.....	Dalhousie Beacon Lights and Douglas Island Light.....	Jan. 1, 1880..	180 00
McConnell, Robert.....	Miscou Gully.....	Sept. 9, 1887..	100 00
McLean, R.....	Miramichi Lt. Ship.....	April 12, 1902..	400 00
Nevers, George.....	Jemseg.....	Nov. 24, 1884	80 00
Nobles, Israel.....	Belleisle Point.....	" 23, 1885..	80 00
Purvis, David.....	No Man's Friend.....	June 2, 1897..	80 00
Preston, S.....	Preston Beach.....	July 11, 1889..	125 00
Pendlebury, Wm. J.....	St. Andrews.....	April 10, 1889..	250 00
Pickett, Robert E.....	Palmer's Point.....	May 11, 1897..	80 00
Parker, Alvin.....	Mulholland's Point.....	June 13, 1901..	200 00
Palmer, E. B.....	Hampstead.....	Nov. 6, 1900..	80 00
Quinton, Wm. M.....	Mark's Point.....	April 12, 1890..	120 00

* Allowance, \$45. † Allowance, \$180. ‡ Allowance, \$300.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light keepers, &c.—Continued.

NEW BRUNSWICK—Concluded.

Name.	Station.	Appointed.	Salary.
			\$ cts.
Russell, James R.	Grindstone Island	Jan. 13, 1899	700 00
Rivers, Robert	Miscou Light-house and Fog Whistle	April 24, 1877	800 00
Robinson, John	Neguac Beach	June 30, 1896	150 00
Richard, Peter F.	Richibucto	May 30, 1895	185 00
Robertson, Charles M.	Robertson's Point	June 30, 1897	80 00
Robertson, Meier	Shediac Island Beacons	Dec. 29, 1873	250 00
Ross, Elijah	Negro Point	March 5, 1878	400 00
Robichaud, Jude	Richibucto Inner Range	June 16, 1902	225 00
Robicheau, Henry B.	Dixon Point	June 21, 1884	150 00
Roberty, A.	Belledune	Feb. 5, 1895	100 00
Richards, D. L.	Partridge Isd. Lighthouse and Fog Whistle	July 19, 1900	800 00
Robertson, J. A. D.	Heron Island	April 1, 1902	200 00
Robichaud, Aug.	Shippegan	June 11, 1902	280 00
Richard, Jos. F.	Richibucto Bar Outer Range	16, 1902	150 00
Sutherland, Geo. A.	Bathurst Harbour	March 20, 1882	*200 00
Seely, Neil	Head Harbour Lighthouse and Fog Whistle	May 3, 1882	800 00
Scott, Chas. F.	Stonehaven	July 20, 1885	100 00
Thomas, Geo. H.	Point Lepreau	Aug. 29, 1884	400 00
Tatton, George T.	Grand Maman Fog Whistle	Oct. 16, 1886	550 00
True, Geo. Howard	Wilmot's Bluff	Sept. 11, 1899	80 00
Upton, Robert	Bridge's Point	11, 1899	80 00
Williston, Seymour	Fox Island	June 4, 1902	300 00
Wagner, Richard	Stud Point	June 7, 1883	80 00
Williams, Forrest W.	William's Wharf	May 11, 1897	80 00

NOVA SCOTIA.

Amero, Chas. A.	Whitehead Island	Nov. 9, 1897	300 00
Amero, George D.	Pubnico	Feb. 6, 1893	240 00
Amirault, James	Sissiboo	July 11, 1899	200 00
Beaman, Edwin	Digby Pier	May 29, 1897	100 00
Bonner, George	Point Aconi	April 18, 1874	200 00
Burgess, Watson	Port l'Hébert	July 26, 1892	150 00
Boutillier, R. J.	Superintendent of Sable Island	Nov. 13, 1884	†600 00
Boutillier, Henry	Paddy's Head, Indian Harbour	June 6, 1901	100 00
Bollong, James	Pope's Harbour	Aug. 6, 1877	300 00
Bourgeois, Philip	Cheticamp Range Lights	May 23, 1898	150 00
Boudrot, Thomas	Hawk Island, Poulamon	June 19, 1901	250 00
Baker, Thomas	Pease Island	May 19, 1879	350 00
Brackett, Wm.	Herring Cove	Aug. 28, 1897	100 00
Belliveau, John H.	Belliveau's Cove	Feb. 16, 1889	80 00
Brownell, Luther	Cold Spring Head	Mar. 27, 1901	120 00
Brown, James	Cranberry Head Fog Alarm	June 22, 1898	500 00
Buchanan, Angus A.	Neil's Harbour	Aug. 14, 1899	150 00
Buckman, Chas.	North Point, Brier Island	Jan. 7, 1901	200 00
Baird, Fredk.	Cariboo Island or Gull Rock	Dec. 30, 1901	300 00
Boudreau, W. C.	Port Felix	July 16, 1902	250 00
Burke, Henry	Country Harbour, Green Island	June 11, 1902	400 00
Chiasson, German	Caveau Point Range Lights	Aug. 20, 1897	120 00
Chiasson, Joseph P.	Grand Entry, Inverness	May 21, 1901	60 00
Crichton, H. H.	Crichton's Head	" 6, 1874	200 00
Crooks, Deman	Liscombe	Oct. 6, 1894	300 00
Connington, Thomas	Louisburg Range Lights	" 26, 1897	150 00
Crowell, John	Seal Island Lighthouse and Fog Whistle	" 14, 1899	800 00
Campbell, Samuel C.	St. Paul's Island, Superintendent	July 17, 1897	‡700 00
Campbell, J. O.	Port Mouton	April 29, 1898	300 00

* Allowance, \$10.

† With board for self and family.

‡ Allowance \$1,400.

STATEMENT giving Names and Stations of Light-keepers, &c.—Continued.

NOVA SCOTIA—Continued.

Name.	Station.	Appointed.	Salary.	
			\$	cts.
Comeau, Louis C.	Meteghan River Wharf.	Oct. 12, 1875.	100	00
Campbell, John.	Red Islands.	Nov. 30, 1901.	120	00
Croucher, George A.	Croucher's Island.	Jan. 31, 1883.	300	00
Clough, Daniel.	Grandique Pole Light.	July 4, 1884.	70	00
Clory, Abraham.	Glasgow Point Pole Light.	" 25, 1894.	150	00
Coolen, Joseph, jr.	Westhaver's Point.	Aug. 5, 1885.	250	00
Carey, James.	Carey's Beach.	" 18, 1886.	60	00
Cameron, L. G.	Beaver Point.	Feb. 15, 1902.	150	00
Campbell, John M.	Engineer Fog Alarm, St. Paul's Island.	Oct. 26, 1898.	400	00
Christian, John.	Betty's Island.	Dec. 12, 1899.	500	00
Creelman, Samuel.	Porte-à-Pique.	May 2, 1901.	25	00
Campbell, D. A.	Louisburg Fog Alarm Engineer.	Mar. 20, 1902.	500	00
Cunningham, A. H.	Cape Sable.	July 16, 1902.	800	00
Clark, Henry A.	Walton Harbour.	Aug. 2, 1902.	125	00
Doane, Isaac.	Cape Sable.	July 1, 1871.	800	00
Duane, Wm.	Green Island.	Oct. 30, 1871.	500	00
Doody, James.	Meagher's Beach, Lighthouse and Fog Whistle.	Feb. 19, 1896.	800	00
Dunne, James M.	Fort Williams.	Oct. 26, 1859.	260	00
Doane, John H.	Yarmouth Fourchu, Lighthouse & Fog Whistle.	July 1, 1874.	800	00
Doane, Joshua.	Yarmouth Harbour.	Feb. 23, 1874.	*350	00
Doyle, Edward.	Mabou Range Lights.	June 14, 1897.	70	00
D'Entremont, W. H.	Abbott's Harbour.	May 22, 1888.	90	00
Dewis, F. H. P.	Cape d'Or.	April 13, 1898.	500	00
Daigle, Nicholas.	Margaree, Outside Range.	June 8, 1901.	50	00
Duann, Wm. A.	Green Island.	May 20, 1902.	500	00
Ellis, Wm. E.	Annapolis, Pt. Prim or Digby L. H. & F. W.	Mar 8, 1875.	800	00
Early, John.	Margaretville.	Feb. 19, 1887.	230	00
Fowler, James E.	Apple River Lighthouse and Fog Whistle.	July 25, 1894.	700	00
Fisher, Joel W.	Baccaro or Barrington.	Aug. 8, 1883.	400	00
Fulker, Wm. G.	Devil's Island.	July 1, 1886.	420	00
Firth, Charles M.	Coffin Island, Liverpool.	June 30, 1880.	400	00
Foster, Israel C.	Port Medway.	Oct. 13, 1892.	260	00
Foster, Samuel T.	Port Medway Breakwater.	Feb. 17, 1899.	100	00
Foster, Geo. M.	Port George.	Nov. 5, 1897.	100	00
Fraser, John A.	Callaghan's Island.	Dec. 31, 1892.	200	00
Faulkner, W. Y.	Burnt Coat.	June 22, 1898.	250	00
Findlay, John H.	Bull Point.	Dec. 7, 1899.	100	00
Franklin, J. L.	Wolfville, N.S.	April 4, 1902.	100	00
Gilkie, Henry A.	Sambro.	Jan. 8, 1877.	800	00
Giffin, Ira L.	Holly Point Isaac's Harbour.	April 28, 1894.	200	00
Gondock, Edward.	Shelburne Sand Point.	Dec. 3, 1880.	280	00
Gardner, Frederick T.	Brooklyn Pier.	Feb. 6, 1885.	100	00
Gallant, Patrick.	Little Loraine.	Jan. 19, 1900.	80	00
Goodwin, Jas. E.	Wood's Harbour.	Aug. 27, 1900.	200	00
Harpell, Jeremiah.	Jeddore Harbour Range Lights.	Jan. 21, 1901.	150	00
Helm, William.	Flint Island.	July 31, 1883.	450	00
Hopkins, Leslie.	Bon Portage Island.	Oct. 20, 1897.	350	00
Huntley, Charles H.	Kingsport Pier.	June 30, 1890.	100	00
Hawley, Mathew.	South Bay, Ingonish.	May 13, 1897.	140	00
Hardy, John.	Gabarus.	Nov. 22, 1890.	200	00
Hennesey, W. P.	Highland Village Pole Light.	April 6, 1899.	25	00
Hinds, James.	Victoria Beach.	Mar. 7, 1901.	100	00
Jackson, David.	Ingonish Island.	April 13, 1898.	360	00
Johnson, Edward.	Chebucto Head Lighthouse and Fog Whistle.	May 14, 1872.	800	00
Joyce, Simon.	Seal Island Pole Light.	July 4, 1884.	100	00
Jamieson, Chas.	Cape St. Lawrence.	Sept. 21, 1893.	400	00
Jamieson, Geo. C.	Cole Harbour Range Lights.	Oct. 21, 1898.	120	00
Long, Joseph.	Canso Harbour.	Dec. 31, 1896.	250	00

Allowance \$30 per annum for fog bell.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*NOVA SCOTIA.—*Continued.*

Name.	Station.	Appointed.	Salary.
			\$ cts.
Leblanc, Severin.....	Fish Island.....	July 1, 1889..	250 00
Lowden, David.....	Pictou Harbour Range Lights	" 12, 1897..	150 00
LeVashe, Wm.....	Arichat.....	Oct. 17, 1898..	250 00
Lyons, John W.....	Barrington Light-ship.....	June 18, 1897..	500 00
Landry, Edward.....	Big Arrow Island.....	Feb. 23, 1897..	200 00
Larkin, Ephraim.....	Shag Harbour, Stoddart's Island	Mar. 18, 1896..	200 00
Livingstone, George S.....	Advocate Harbour.....	May 8, 1884..	250 00
LeBlanc, Benjamin.....	Tusket Wedge.....	Nov. 1, 1892..	300 00
Morrell, B. H.....	Brier Island.....	June 6, 1901..	400 00
Morrison, M. D.....	Black Rock Point.....	" 8, 1892..	250 00
Muise, Marcellin.....	Cheticamp	Nov. 27, 1896..	300 00
Misner, John E.....	Fort Point.....	May 16, 1896..	150 00
Moser, Samuel.....	Moser's Island.....	Nov. 6, 1885..	450 00
Mullins, James.....	Mullins Point	June 8, 1892..	250 00
Munro, William.....	Pictou.....	Nov. 22, 1890..	460 00
Murphy, Michael.....	Pomquet Island.....	Dec. 18, 1890..	350 00
Mundell, Joseph.....	Sand Point.....	Oct. 18, 1869..	400 00
Martell, John T.....	Scatterie Lighthouse and Fog Whistle	July 30, 1897..	800 00
Murray, John.....	Cape George.....	Nov. 3, 1882..	200 00
Munroe, William L.....	Three Top Island	Oct. 28, 1879..	300 00
Mitchell, John W.....	Jeddore Rock.....	Sept. 29, 1882..	400 00
Mitchell, Wm A.....	Quaker Island.....	Feb. 19, 1896..	300 00
Matheson, Murdoch.....	Whycocomah Pole Light.	Sept. 11, 1884..	60 00
Morrison, Widow.....	Freestone Pole Light.....	June 5, 1897..	150 00
Mauger, John J.....	Cape LaRonde.....	Nov. 16, 1898 ..	300 00
McKay, H. G.....	Bird Island.....	May 21, 1901..	450 00
Myrick, John.....	Cape Race, Newfoundland, Lighthouse and Fog Whistle.....	Nov. 1, 1897..	1,000 00
McDonald, Robert.....	Carter's Island or Lockport.....	Jan. — 1885..	275 00
McRae, Roderick.....	Margaree or Sea Wolf Island.....	Feb. 3, 1898..	400 00
McLellan, Rod'k.....	Margaree Harbour, Inside Range.	June 8, 1901..	50 00
McKay, R.....	North Canso.....	Feb. 4, 1882..	350 00
McFarlane, Andrew	Pictou Island.....	June 8, 1892..	400 00
McDonald, John A.....	Port Hood.....	May 10, 1880..	280 00
McDonald, James.....	Point Tupper.....	Mar. 15, 1870..	300 00
McAskell, Donald.....	St. Anne's Harbour.....	June 26, 1889..	140 00
McLean, H.....	Gillis Point.....	Dec. 18, 1897..	150 00
McRae, Hector.....	McKenzie Point, Plaster Harbour.....	Aug. 20, 1890..	160 00
McLeod, Norman.....	Cape North, Money Point.....	Oct. 14, 1899..	400 00
McKay, Angus.....	Clarke's Harbour.....	June 3, 1902..	50 00
McNeil, F. X. S.....	Iona	Nov. 16, 1901..	120 00
McRae, Donald.....	Kidston's Island.....	May 17, 1892..	200 00
McLeod, Angus.....	St. Esprit.....	Oct. 27, 1880..	400 00
McDonald, Norman.....	Marjorie's Isle Pole Light.....	July 4, 1884..	100 00
McAskill, Kenneth	Jerome Point	" 30, 1901..	250 00
McNeil, John C.....	Piper's Cove.....	Dec. 18, 1897..	120 00
McNeil, Laughlin.....	McNeil's Back Pole Light.....	Aug. 6, 1884..	60 00
McFadyen, Malcolm.....	Mabou Range Light	April 17, 1891..	50 00
McVickar, Archibald.....	Cow Bay Breakwater.....	July 3, 1896..	70 00
McNeil, John.....	Campbell's Island, Victoria Co.....	May 22, 1900..	100 00
McEachern, A. L.....	Cape St. George.....	Sept. 8, 1898..	450 00
McLeod, Murdoch.....	Pugwash.....	Dec. 10, 1897..	250 00
McKenna, John L.....	McNutt's Island, Shelburne Harbour, L. H. & F. W.....	Mar. 31, 1899..	800 00
MacIntosh, James	Egg Island	July 28, 1899..	500 00
McLellan, Ingersoll L.....	Economy Pole Light.....	May 16, 1899..	6 00
McAdam, Hugh R.....	Arisaig	Nov. 14, 1898..	100 00
Nass, Henry.....	Lunenburg	Mar. 12, 1897..	300 00
Nickerson, Byron.....	Negro Island	July 26, 1897..	300 00
Nunn, George	Sydney South Bar..	June 20, 1872..	300 00
O'Leary, Wm.....	Beaver Island	Feb. 22, 1900..	350 00

* Per month during season of navigation.

2-3 EDWARD VII., A. 1903

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NOVA SCOTIA—*Cōncluded.*

Name.	Station.	Appointed.		Salary.
				\$ cts
O'Hara, Theodore.	Port Bickerton	Jan.	26, 1901..	150 00
Orchard, L. D.	Gull Rock.	"	1, 1877..	400 00
Payzant, Jason.	Little Hope Island.	Oct.	22, 1901..	500 00
Pearl, Albert.	Green Island	Dec.	29, 1873..	500 00
Price, Philip.	Louisburg	Nov.	8, 1897..	350 00
Peters, John G.	Low Point.	Oct.	1, 1865..	460 00
Pettis, William.	Parrsboro'	Dec.	6, 1888..	340 00
Palmer, Howard.	Wolfe Point.	Oct.	14, 1899..	250 00
Palmer, H. W.	Fort Point.	May	22, 1878..	200 00
Perry, John	Sheet Harbour.	Dec.	17, 1878..	500 00
Perry, Levi.	North East Harbour Range Lights.	June	17, 1899..	200 00
Peters, John N.	Brier Island	"	6, 1901..	400 00
Robinson, Charles.	Black Rock.	Mar.	16, 1885..	330 00
Ruggles, Frank.	Boar's Head.	May	24, 1901..	350 00
Robicheau, B. H.	Cape St. Mary's.	July	5, 1886..	350 00
Rathburn, S. M.	Horton Bluff	"	1879..	250 00
Reid, George J.	Isle Haute.	Oct.	18, 1889..	500 00
Ross, Robert	George's Island.	Jan.	18, 1876..	250 00
Robblee, Jacob V.	Shafner's Point.	May	29, 1897..	150 00
Riley, Simon W.	Annapolis Royal.	Mar.	7, 1892..	100 00
Richards, Stephen C.	Charlo Cove, Guysboro'	Nov.	4, 1901..	120 00
Ross, Alex. W.	Little Narrows.	May	23, 1902..	120 00
Rogers, Lloyd	Amet Island.			
Smith, Eph.	Inner Pole Light Sambro Island.	Jan.	3, 1900..	20 00
Sullivan, James.	Cape Canso, Cranberry Island, L. H. & F. W.	May	23, 1887..	800 00
Scott, M. C.	Guysborough	April	19, 1884..	220 00
Swinehammer, George	Peggy's Cove Point	Jan.	4, 1883	350 00
Spencer, Robert A.	Spencer's Point.	April	1, 1870..	125 00
Suthern, Edward W.	Westport	"	12, 1890..	300 00
Saulnier, John H.	Church Point.	Aug.	8, 1878..	200 00
Sampson, C.	Ouetique Island.	Dec.	1, 1874..	350 00
Strum, James A.	Westhaver Island.	Sept.	23, 1888..	200 00
Sollows, A. J.	Green Cove Pole Light.	Dec.	28, 1900..	75 00
Sampson, Theodore.	South Beaver Harbour Pole Light.	Oct.	15, 1892..	80 00
Smith, Caleb.	Salter's Head Beacon Light.	June	21, 1888..	60 00
Smith, William B.	Westhead Barrington.	April	12, 1890..	200 00
Simpson, John.	Pictou Custom House Light	Dec.	10, 1901..	100 00
Smeltzer, John D.	Hobson Island.	April	10, 1900..	300 00
Smith, John Young.	Pages Island, Port La Tour	Jan.	17, 1901..	150 00
Vigneau, George.	Jerseyman's Island.	Mar.	23, 1883..	300 00
Vance, George.	Masstown.	June	29, 1898..	25 00
Walsh, Patrick.	Lingan, C.B.	Feb.	22, 1902..	200 00
Wolfe, Howard M.	Ironbound.	June	22, 1895..	250 00
Wells, James	Whitehead	Oct.	20, 1897..	510 00
Wambold, James.	Sheet Harbour Passage.	May	11, 1887..	50 00
Webb, Patrick.	Harbour au Bouche	Feb.	19, 1896..	250 00
Webber, James M.	Torbay.	May	10, 1898..	300 00
Wynacht, W. H.	Cross Island Lighthouse and Fog Whistle.	April	13, 1898..	800 00
Young, Uriah	Chester, Quaker Island.	Feb.	15, 1884..	400 00
Yorke, Freeman.	Cape Sharpe.	June	30, 1902..	250 00

PRINCE EDWARD ISLAND.

Anderson, Albert	St. Peter's Harbour	July 25, 1900.	130 00
Allen, Joel S.	Indian Point Pier	May 18, 1898	375 00
Clark, Jesse	St. Andrew's Point, Inner Range.	August 14, 1901.	125 00
Champion, Wm.	Cascumpec Harbour.	October, 25, 1897	100 00

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*PRINCE EDWARD ISLAND—*Continued.*

Name.	Station.	Appointed.	Salary.
			s. cts.
Costain, Frederick.....	Miminegash, Rix Point Range Light.....	May 19, 1897....	40 00
Connors, George.....	St. Andrew's Point, Outer Range.	June 3, 1901....	125 00
Fraser, John	Summerside Wharf	April 12, 1877. .	100 00
Gaudet, Agape	Tignish.....	August 30, 1897..	130 00
Gillis, Donald	Point Prim	Decemb. 10, 1897	300 00
Gallant, Jos. Jos.....	Cape Egmont.....	Oct. 21, 1902....	200 00
Hardy, Wm.....	Little Channel.....	July 26, 1875....	100 00
Howatt, Abner J.....	Crapaud Outer Range Light.....	July 22, 1893....	100 00
Harris, Wm.....	Cape Bear.....	Nov. 11, 1896....	350 00
Kennedy, Alexander.....	Hazard's Inner Range Light.....	June 27, 1900....	60 00
Kielly, John Andrew	Cove Head, Inner Light.....	Nov. 27, 1890....	90 00
(Vacant).....	Crapaud Inner Range Light.....		100 00
Lewis, James.....	Brighton Beech Range Light.....	March 1, 1899..	100 00
Munn, Duncan	Little Sands.....	May 1, 1877	30 00
Morrison, John D.....	Cardigan.....	August 15, 1901..	100 00
McDonald, John W.	Tracadie.....	May 24, 1901. .	100 00
McRae, Daniel.....	Hazard's Outer Range Light	April 6, 1900....	70 00
McDonald, Lauchlin.....	East Point Lighthouse and Fog Whistle.....	Feb. 23, 1897....	600 00
McDonald, John.....	Orwell.....	June 25, 1879....	80 00
McLeod, Jas. H.....	New London.....	January 29, 1896	100 00
McDonald, Wm.....	West Point	Dec. 1, 1875	300 00
McKay, John.....	Wood Island.....	Sept. 12, 1898...	250 00
McDonald, Angus	Souris.....	Nov. 13, 1880....	300 00
McDonald, Jas. D.....	Savage Harbour.....	July 11, 1889 ...	100 00
McLeod, Lemuel.....	Murray Harbour Beach Lights.....	Dec. 21, 1897 ...	50 00
McPherson, Daniel W....	Brush Wharf, Orwell, Range Lights	January 13, 1899	60 00
McNeil, Alex. S.....	Block House, Charlottetown.....	March 25, 1901..	340 00
Oulton, Robert T.....	Savage Island.....	June 14, 1897 ...	80 00
O'Brien, Patrick.....	Miminegash Range Light	May 14, 1897 ...	60 00
Phee, James.....	North Cape.....	Sept. 4, 1897 ...	300 00
Penny, Robert	Murray Harbour, Penny's Light.....	Nov. 11, 1897...	50 00
Pino, Joseph N.	North Rustico.. ..	February 6, 1897	125 00
Ranaghan, Peter	Sea Cow Head.....	April 21, 1873...	250 00
Robertson, Alfred.....	Annandale Range Lights.....	October 5, 1898..	100 00
Sinclair, Wm.	Fish Island.....	March 8, 1897...	250 00
Stewart, Geo	Summerside Harbour Back Range Light	Sept. 5, 1895....	80 00
Steele, Colin.....	Panmure Island.....	June 3, 1901	250 00
Tuplin, Jas. C..	Sandy Island, Cascumpec	May 5, 1897....	300 00
Taylor, Chas.....	Darnley Basin Range Lights.....	June 14, 1897...	60 00
Taylor, James W.....	St. Peter's Island.....	May 1, 1897.....	200 00
Wiggins, G. W. J.....	Darnley Point Range Lights.....	October 16, 1896..	100 00
Wright, Chas. L.....	Wright's Range Light, Crapaud	June 14, 1894....	100 00

BRITISH COLUMBIA.

Brown, Wm. Henry.....	Ballinac Island	Oct. 3, 1901.....	180 00
Carpenter, C.....	Dryad Point Light.....	Nov. 7, 1899....	180 00
Crozier, James ..	Bare Point Chemainus	June 12, 1897 ...	168 00
Clarke, M. G.	Entrance Island Lighthouse and Fog Whistle..	Nov. 26, 1897...	900 00

2-3 EDWARD VII., A. 1903

STATEMENT giving Names and Stations of Light-keepers, &c.—*Concluded.*

BRITISH COLUMBIA—*Concluded.*

Name.		Station.	Appointed.	Salary.
				\$ cts.
Codville, James	Pointer Island	July 11, 1900	360	00
Croft, M. A.	Discovery Island Lighthouse and Fog Whistle	April 1, 1902	900	00
Daykin, William P.	Carmanah Point Lighthouse and Fog Whistle	Nov. 4, 1890	1,200	00
Davidson, John	Cape Mudge	June 27, 1896	360	00
Davies, John	Fiddle Reef, Victoria	Dec. 2, 1898	25	00
Eastwood, F. M.	Race Rocks	Jan. 31, 1891	1,200	00
Erwin, Walter	Point Atkinson Lighthouse and Fog Whistle	Oct. 5, 1880	1,000	00
Forsythe, James	Ivory Island	Sept. 5, 1900	500	00
Georgeson, Henry	Plumper Pass Lighthouse and Fog Whistle	July 21, 1884	900	00
Georgeson, James	Saturna Island, East Point	Oct. 26, 1889	550	00
Grove, John	Prospect Point	June 21, 1898	300	00
Gallop, J. W.	Balfour	March —, 1900	20	00
Gordon, Walter	Yellow Island	Sept. 27, 1901	500	00
Greenway, H.	Sands Head	January 30, 1902	900	00
Harrison, S. G.	Beren's Island	Nov. 4, 1897	300	00
Harvey, Thos. W.	Lawyer's Island	Oct. 22, 1801	600	00
Jeffries, Alfred	Sister's Rock, Vancouver	April 30, 1901	500	00
Jones, William D.	Brockton Point, Burrard Inlet	Aug. 20, 1890	300	00
Johnston, Capt. George	Fisgard	July 30, 1901	500	00
McColl, Wm.	Garry Point	Aug. 4, 1898	10	00
Patterson, Thomas	Cape Beal	March 2, 1895	500	00
Richardson, John	Portlock Point Lighthouse and Fog Alarm	Dec. 2, 1895	460	00
Scarlett, Robert	Egg Island	Aug. 22, 1900	600	00

*Per month. †Allowance, \$700.

APPENDIX No. 12.

REPORT OF THE CHAIRMAN OF THE BOARD OF STEAMBOAT INSPECTION.

CHAIRMAN'S OFFICE,
OTTAWA, November, 1902.

To the Honourable
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit the annual report of the steamboat inspection service for the fiscal year ended June 30, 1902.

It contains the general work of the service during the period mentioned, giving the number of steamers inspected, with their gross tonnage, and the amount of tonnage dues and fees collected as known by the inspectors on account of inspection. Also a statement of the board meetings held, with the penalties enforced for violations of the Steamboat Inspection Act; and the casualties occurring as reported from the several divisions, with the reports as to the number of vessels lost or unfit for service in the several districts, and the number of new vessels added thereto.

In addition to the steamboats inspected at the port of Montreal, the hoisting gear and ships' tackle of 417 vessels, used for the purpose of loading and unloading those vessels, was also inspected by the steamboat inspectors of that port.

NUMBER of steam vessels reported as known by the inspectors of steamboats in the Dominion, and their gross tonnage, for the year ended June 30, 1902; also the number of vessels inspected, but not registered in the Dominion, for same date.

DIVISION.	Total number of Dominion registered steamers.	Gross tonnage of Dominion registered steamers.	Number of steamers inspected but not registered in the Dominion.	Gross tonnage of steamers inspected but not registered in the Dominion.
West Ontario.....	422	89,658.00	36	20,278 00
Kingston.....	162	20,143.59	31	2,400 32
Montreal.....	216	24,132.00	2	2,835 00
Quebec.....	161	39,034.00	Nil	
Nova Scotia.....	135	22,195.62	21	25,769 50
New Brunswick and Prince Edward Island.....	133	14,278.41	15	6,828 01
British Columbia and Yukon Territories.....	246	53,225.26	25	27,001 27
Manitoba and North-west Territories.....	138	6,335.84	2	693 37
	1,513	269,002.72	132	85,805 47

2-3 EDWARD VII., A. 1903

NUMBER of Dominion registered steam vessels inspected and their gross tonnage, with the amount of dues and fees collected on account of steamboat inspection, during the year ended June 30, 1902.

DIVISION.	Number of Dominion registered steamers inspected.	Gross tonnage of Do- minion registered steamers inspected.	Amount of dues and fees collected on ac- count of steamboat inspection.
			\$ cts.
West Ontario.	343	83,525 00	8,784 72
Kingston.....	157	20,429 18	2,449 89
Montreal	200	24,151 23	3,350 20
Quebec.....	169	38,478 00	4,001 56
Nova Scotia.....	118	20,674 66	4,532 08
New Brunswick and Prince Edward Island.....	109	13,467 40	2,339 84
British Columbia and Yukon Territory....	218	53,175 72	7,342 60
Manitoba and North-west Territories.....	105	6,450 55	1,034 44
Inspection of tow barges			120 00
Engineers' Certificates.....			910 00
	1,419	260,351 74	34,915 33

BOARD MEETINGS.

A meeting of a quorum of the Board of Steamboat Inspection was convened at Toronto, November 14, 1901, for the purpose of considering amendments to the rules for the construction of boilers, and the bringing of them into greater conformity with the British Board of Trade rules, which in due time will be adopted and published. Also, owing to the numerous applications made to have vessels propelled by power derived from naphtha, gasoline, or such material, licensed for the purpose of carrying passengers. This matter was given careful consideration, and in view of the number of accidents from fire and explosion which have occurred in such vessels, and the inflammable nature of the material, together with the unreliability of the motive power as of present construction, it was the unanimous opinion of the board, in the interest of public safety, not advisable to license such vessels for the purpose of carrying passengers.

On March 12, 1902, a meeting was again convened at Toronto, composed of the following members: J. Dodds and E. W. McKean of Toronto, T. P. Thompson, Kingston, W. Laurie, Montreal, J. Samson, Quebec, E. Adams, Ottawa.

This meeting was convened for the purpose of again giving consideration to a former request of the Bertram Engine Works Co. as stated in my report for 1901; also to examine the new boiler which burst under test pressure at the Polson Iron Works Co. of Toronto; and to consider the subjects considered and discussed at the former meeting of the Board November 4, 1901, together with the request of the National Association of Marine Engineers as presented to the Hon. Minister of Marine and Fisheries for amendments to the laws pertaining thereto, as to the board's opinion thereon, for the information of the Hon. Minister.

Relating to the bursting of the shell of the Polson Co. boiler while under test pressure, the following was the opinion of the Board from the tensile and bending tests made of the material: that the tensile and bending tests in some cases showed fairly satisfactory, but the comparatively low reduction of area at point of fracture in test strips and the abruptness of the fractures, together with the results of the rolling and pressing tests to which subjected, clearly demonstrated the material as very brittle and lacking the quality of toughness; and should not in the interest of safety be permitted for use in shells of steamboat boilers; and demonstrates the necessity of careful attention and

SESSIONAL PAPER No. 21

inspection on the part of inspectors when inspecting boilers under construction, as to the quality of the material being used.

February 19, 1902.—A meeting of the full Board of Hull Inspectors was convened at Ottawa, for the purpose of revising the rules where deemed necessary to meet the requirements, as considered most suitable and adapted to the conditions as existing in the several divisions.

The meeting was convened from 19th to 22nd both days inclusive, during which time the rules relating to the inspection of boats, life preservers and other life-saving appliance to be carried on steamboats or other vessels were carefully considered, clause by clause, and revised where deemed advisable in the interest of the public service, with due regard to safety; which in the opinion of the Board will be more workable and applicable to the several localities, than the present rules and conditions as existing; and in due time will be adopted and published together with the rules for the construction of boilers.

PROSECUTIONS WITH PENALTIES ENFORCED FOR VIOLATION OF THE STEAMBOAT INSPECTION ACT.

October 12, 1901.—A complaint was received by the department informing them the steamer *Minneola* was trading on the waters at Rat Portage, Ont., in violation of the Steamboat Inspection Act, and not being registered; on inquiry by the department, instructions were issued to the Collector of Customs at Rat Portage to tie the vessel up, and place her under seizure until the requirements of the law were complied with, and a fine of \$50 and costs collected for the violation; in all amounting to \$80.15, which was collected and received by the department, April 11, 1902.

April 11, 1902.—At Victoria, B.C., the Collector of Customs imposed a fine of \$100 on the steam tug *Tyee*, of New Westminster, for carrying passengers and not having been certificated for that purpose; which charge was admitted and the penalty paid, as per bank draft No. 807, received by the department.

April 8, 1902.—Information was laid against the captain of the steam-tug *Blonde* for infraction of the Steamboat Inspection Act, by carrying passengers without holding a certificate for that purpose. The case was tried before the Stipendiary Magistrate at New Westminster, B.C., who finding the defendant guilty, imposed a penalty of \$75, and costs \$21.60, which was paid by defendant.

May 15, 1902.—Information was laid against the owners of the steam-tug *Eva* for carrying passengers without being certificated for so doing; which case came before his Honour Judge Henderson, at Vancouver, B.C., and was proven, whereby judgment was given imposing a fine of \$100, and costs \$20.50, which was paid by defendants.

May 22, 1902.—Steam-tug *Eagle* charged with carrying passengers in violation of the law: the case coming before his Honour Judge Henderson, when the defendants appeared and through their counsel pleaded guilty to the charge, and in view of the circumstances a fine of \$100 and costs was imposed.

On the same date, steamer *Cleeve* having been charged with carrying passengers in violation of the law, this case also came before his Honour Judge Henderson, when the offence was admitted on the part of the company, who stated they had applied for a passenger license for the vessel, and accordingly his Honour imposed a fine of \$100, which has been paid by defendants.

CASUALTIES.

The following are the casualties reported from the several districts as having occurred during the fiscal year ending June 30, 1902.

West Ontario Division.

September 3, 1901.—Steamer *John J. Long* of Collingwood, while lying at the dock in Meldrum bay, was almost completely destroyed by fire: cause of fire being unknown

2-3 EDWARD VII., A. 1903

September 11, 1901.—Steamer *Gertrude A. Ranney* of St. Catharines, while lying at the dock at Little Current, was forced against it by a tow of logs en route down the North Channel, and the steamer was so badly damaged that she was abandoned.

September 17, 1901.—Steamer *Bannockburn* of Montreal went ashore near Harbour Beach, Michigan, U.S., she was subsequently released without any material damage.

September 17, 1901.—Steamer *Saturn* of Kingston while on a voyage from Cleveland to Owen Sound, loaded with coal, encountered a severe gale on Lake Huron, when near Southampton her engine became disabled, and as the steamer was rapidly filling with water, she was abandoned. The crew reaching Southampton in safety.

September 25, 1901.—Steamer *Snowstorm*, of Port Stanley, was partially destroyed by fire while lying at the wharf in Toronto; she has since been repaired: cause of fire unknown: no lives were lost.

November 10, 1901.—Steamer *E. Winsor*, of Wallaceburg, sprang a leak on Lake Huron, and sank in the St. Clair river, opposite Port Huron, Michigan, U.S. No loss of life.

November 11, 1901.—Steamer *R. C. Britton*, of Wallaceburg, in a fog went ashore on the Duck islands, Lake Huron, remaining there all winter, was released in April, 1902, and towed to Collingwood, where she was repaired.

East Ontario Division.

September 10, 1901.—Steamer *North King* of Kingston while on trip from Port Hope to Charlotte, one of the circulating pipes gave out, in the furnace of the port boiler, this boiler was shut off, and proceeded to port with starboard boiler, where repairs were made.

October 2, 1901.—Steamer *Richelieu*, of Ottawa, while on her trip from Picton to Kingston, foundered in the lower gap, Bay of Quinte, she was heavily laden, and being caught in the trough of the sea, the cargo shifted sufficiently to hold her on her port side until she went down. The crew and passengers got off safely in one of the life-boats.

May 10, 1902.—Steam barge *Iona*, of Picton, while loading coal at Oswego, was partially destroyed by fire, supposed to have originated from candles used by the coal trimmers. One of the firemen lost his life. The boat was towed to Trenton, hauled out, and repaired.

Montreal Division.

July 7, 1901.—Grain Elevator No. 1, while lying in the harbour of Montreal, sprung a leak during the night and sank. No person on board.

December 15, 1901.—Tug *Monarque*, laid up for the winter in Sorel, was wrecked during the ice shove, caused by a sudden rise of water in the Richelieu river.

March 2, 1902.—Steamer *Tiber*, of Montreal, an iron screw vessel of 1,736 gross tons, while on a voyage from Louisbourg to Halifax with a cargo of coal, was lost with the full crew of twenty persons, including officers and men. The wreck was found about a month later off White Point, near Cape Canso, under water, with her propeller gone and both anchors out. It is supposed that she was disabled, and during a severe storm that was raging at the time, was driven on the rocks; but the facts will never be known, as all on board perished.

Quebec Division.

No casualties reported as having occurred.

Nova Scotia Division.

July 12, 1901.—The paddle passenger steamer *Marion*, while on a voyage from Sidney to Baddeck broke the starboard shaft between spring bearing and paddle wheel. The steamer was towed into port and a new shaft supplied.

SESSIONAL PAPER No. 21

November 3, 1901.—The screw steamer *Bruce*, on a voyage between Sydney N.S., and Port au Basque, Newfoundland, blew out starboard main steam pipe at flange connection to main t, killing one man and badly scalding three others. At a coronor's inquest held at St. John's it was found that the cause of accident was from defective brazing at flange, the spelter not having been sufficiently flowed.

New Brunswick and Prince Edward Island Division.

July 15, 1902.—Steamer *Addine Paddock*, intended for ferry service from Rothesay to Clifton, N.B., not in commission, was burned to water's edge at Clifton, Kings Co. Cause unknown.

Manitoba and North west Territories.

No casualties reported as having occurred.

British Columbia and Yukon Territory.

August 15, 1901.—Steamer *Islander*, of Victoria, 1,495 gross tonnage, on a voyage from Skagway, Alaska, to Victoria, B.C., at 2.15 a.m. struck a submerged iceberg in St. Stephens Channel off Douglas Island, and sank in twenty minutes from time of striking, in forty fathoms of water; whereby the master, with sixteen of the crew, and twenty-three passengers were drowned.

September 10, 1901.—Steamer *Amur*, of Victoria, 907 tons gross, on a voyage from Skagway, Alaska, to Victoria, B.C., stranded on Narrow Island, Chilkat Island, Lynn Canal, Alaska, was floated off and brought to Victoria, where repaired; damage garboard strake torn off about forty feet, with piece of keel and forefoot.

October 12, 1901.—Steamer *Hating*, of Vancouver, 1,394 tons gross, on a voyage from Skagway to Victoria, owing to fog in Sabine Channel, Straits of Georgia, stranded in Tucker Bay, Servis Island, damaging stem, keel, frames, floors, and about forty plates in fore part of ship; was floated, brought to Victoria and repaired.

January 2, 1902.—Steamer *Bristol*, of Victoria, 1,983 tons gross, on a voyage from Ladysmith, Vancouver Island, to Alaska, with coal, owing to a gale from south east, and dirty weather, at 11 p.m. stranded on a reef off Grey Island, off N. Dundas Island, Chatham Sound; about 7 a.m. following morning vessel slipped off reef and sank in 34 fathoms of water; whereby seven of the crew including master, pilot, chief and 3rd engineer were drowned. Vessel a total loss.

January 12, 1902.—The steam scour *Katie*, of 46 tons gross, on voyage from Victoria to Ladysmith, for coal, during a south-west gale stranded on Trial Island, and was broken up; a total loss.

March 12, 1902.—Steamer *Mermaid*, of Vancouver, owing to a strong wind and tide, was driven on Newcastle Island, off Nanaimo, settling on the rocks, by which her hull was pierced through in several places was floated off, brought to Victoria and repaired.

May, 1902.—Steamer *Viking* while hauled out for repairs to bottom, caught fire at night and became a total loss, supposed to have occurred from spontaneous combustion; no person on board.

April 10, 1901.—Stern wheel steamer *Royal City*, of New Westminster, 200 gross tons, while moored to the wharf at Mission City, Fraser River, fire broke out at night, and having hay on board as part of cargo, that caught fire, the crew were unable to save the vessel, which after burning for about three hours, sank in thirty feet of water.

October 12, 1901.—The stern wheel steamer *Goddard* while towing a scow on Lake Le Barge, Yukon Territory, and running before the wind in a gale, the tow line parted, when she broached to at once and capsized, and out of a crew of five men, the captain and two of them were drowned.

I am, sir, your obedient servant,

EDWARD ADAMS,
Chairman Board of Steamboat Inspection.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the Year ended June 30, 1902.

WEST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessels.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Abino.....	40	July 15...	8	5 64	Screw, Niagara River.
Maid of the Mist.....	80	" 16...	62	9 96	" " "
Union.....	280	" 17...	267	29 36	Paddle, Buffalo and Fort Erie.
Hope.....	300	" 17...	170	21 60	Screw " "
Alert.....	Tug.....	" 18...	47	8 76	" Welland Canal.
Hector.....	"	" 18...	43	8 44	" " "
City of Dresden.....	100	" 25...	194	23 52	" Lake Erie.
Scotia.....	Passeng'rs	Not issued	13	6 04	" Amherstburg and vicinity.
W. E. C. U.....	Yacht....	"	6	5 48	" " "
Sarnia.....	Tug.....	"	85	11 80	" Lake Huron.
Evelyn.....	Fish'g tug	Aug. 14..	32	7 56	" " "
Thistle.....	"	" 14..	36	7 88	" " "
Huron.....	Tug.....	" 14..	55	9 40	" " "
Jno. R. Arnoldi.....	Dredge...	Not issued	116	14 28	Goderich Harbour.
Ella.....	Yacht....	Aug. 19..	15	6 20	Screw, Long Point Bay.
W. M. German.....	Fish'g tug	" 20..	28	7 24	" Lake Erie.
Hazard.....	"	" 20..	34	7 72	" " "
The Belle.....	"	" 20..	31	7 48	" " "
Ivey Alderson.....	"	" 21..	39	8 12	" " "
Eleanor.....	"	" 22..	26	7 10	" " "
City of Ladysmith....	"	" 22..	35	7 80	" " "
Wm. Wilson.....	"	" 22..	12	5 96	" " "
Lena.....	"	" 22..	14	6 12	" " "
Maxie.....	"	" 22..	16	6 28	" " "
Winnie.....	Tug.....	" 27..	14	6 12	" Lake Huron.
*Sarah E. Day.....	"	" 27..	5	10 80	" " "
Geo. Swann.....	Fish'g tug	Not issued	18	6 44	" " "
Frank G. McAulay....	"	Aug. 28..	43	8 44	" " "
A. Chambers.....	"	" 28..	23	6 84	" " "
Earl.....	"	" 28..	18	6 44	" " "
John Logie.....	"	" 29..	37	7 96	" " "
Arbustus.....	Tug.....	" 29..	49	8 92	" " "
Mabel M.....	"	Issued....	7	5 56	" " "
W. J. Strong.....	"	Aug. 30..	41	8 28	" " "
Dredge Hackett....	Dredge...	" 30..	96	12 68	Harbours on Lakes.
Snowstorm.....	Tug.....	Sept. 3..	17	6 36	Screw, Toronto Bay.
Swan.....	Fish'g tug	" 11..	14	6 12	" Lake Erie.
Jubilee.....	"	" 11..	10	5 80	" " "
May B.....	"	" 11..	10	5 80	" " "
Belle.....	"	" 11..	16	6 28	" " "
Enterprise.....	"	" 12..	18	6 44	" " "
Uncle Tom.....	"	" 12..	8	5 72	" " "
Great Western.....	200	" 18..	1,080	91 40	Paddle, Windsor and Detroit.
Lansdowne.....	200	" 19..	1,571	133 68	" " "
Huron.....	245	" 21..	1,052	92 16	Twin screw " "
Eagle.....	Fish'g tug	Not issued	12	5 96	Screw, Lake Huron.
T. J. Collop.....	Freight...	Oct. 3...	63	10 04	" Wallaceburg and vicinity.
Comfort.....	40	" 5...	14	6 12	" Detroit River.
Willie Scagel.....	Tug.....	" 7...	22	6 76	" " "
Harry Sewell.....	"	" 7...	25	7 00	" " "
W. S. Ireland.....	Freight...	Not issued	105	13 40	" " "
Tempest.....	Tug.....	"	21	6 68	" " "
F. B. Brady.....	"	Aug. 22..	29	7 32	" Lake Erie.
Gordon Brown.....	Fish'g tug	Sept. 12..	33	7 64	" " "
Magnolia.....	Tug.....	Nov. 12..	367	34 36	" Georgian Bay.
Reliance.....	"	Not issued	311	...	" " "
Metamora.....	"	Nov. 13..	239	24 12	" " "
Menodora.....	"	" 13..	73	10 84	" " "
D. L. White.....	"	Not issued	56	9 48	" " "

*Dues and fees for 1900 and 1901.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
D. R. Van Allen.....	Freight...	March 14.	318	30 44	Screw, Duluth and Montreal.
Ontario	500	" 25.	1,615	137 26	Paddle, Windsor and Detroit.
Michigan.....	500	" 25.	1,730	146 40	" "
Seguin.....	20	" 26.	818	73 44	Screw, Quebec and Duluth.
Lakeside.....	Coasting Lake....	29.	834	35 84	" Lake Ontario.
Macassa	616	April 7.	450	44 72	Twin screw, Hamilton and Toronto.
Modjeska	801	" 7.	678	62 24	" "
Lake Michigan.....	Freight ..	" 7.	573	50 84	Screw, Duluth and Quebec.
Arabian.....	13	" 7.	1,073	93 84	" "
Acacia.....	200	" 8.	107	16 54	Screw, Burlington Bay.
*St. George.....	Tug.....	Not issued	21	20 04	" Toronto Bay.
Niagara	River. Lake....	April 9.	412	40 96	" Lake Ontario and St Lawrence River
Cuba.....	109	" 9.	931	82 48	" Great lakes.
Erin.....	Freight ..	" 10.	651	57 08	" "
Lincoln	511	" 11.	337	34 96	" Thessalon and Soo.
Melbourne.....	125	" 14.	894	79 52	" Montreal and Toledo.
Persia.....	150	" 14.	757	68 56	" " Hamilton.
Armenia.....	Freight ..	Not issued	477	42 36	" Great lakes.
United Empire.....	357	April 15.	1,961	164 88	" Windsor and Duluth.
Monarch.....	330	" 15.	2,017	169 36	" "
Tempest.....	Tug.....	Not issued	21	"	" Sarnia and vicinity.
Orion.....	Freight ..	April 15.	846	72 68	" Great lakes.
Tepiakan.....	Fish'g Tug	" 17.	29	7 32	" Lake Huron.
Reginald.....	Tug.....	" 17.	186	19 88	" Georgian Bay.
Ocean.....	125	" 18.	684	62 72	" Montreal and Sarnia.
Hamilton	375	" 18.	938	83 04	Paddle, Montreal and Hamilton.
Island Queen.....	140	" 18.	23	6 84	Screw, Toronto Bay.
John Hanlan.....	185	" 18.	37	7 96	" "
Shamrock.....	412	" 18.	154	20 32	Paddle, "
Dan'l Lamb.....	Dredge ..	" 19.	263	25 24	" "
Tecumseh.....	Freight ..	" 24.	840	72 20	Screw, Great lakes.
Traveler.....	Tug.....	Not issued	438	40 04	" Georgian Bay.
Chicora.....	872	May 1.	931	82 48	Paddle, Lake Ontario.
Chippewa.....	2,000	" 1.	1,514	129 12	" "
Corona.....	1,456	" 1.	1,274	109 92	" "
Ontario.....	244	" 1.	98	12 84	Screw, Niagara River.
Luella.....	110	" 5.	38	8 04	" Toronto Bay.
Ada Alice.....	125	" 5.	60	9 80	" "
Mayflower.....	900	" 5.	189	23 12	Paddle, "
Myles.....	Freight ..	Not issued	1,199	100 92	Screw, Great lakes.
Balize.....	Tug.....	" "	250	25 00	" Georgian Bay.
Kingston.....	1,000	May 13.	2,925	242 00	Paddle, Toronto and Prescott.
Toronto.....	1,000	" 13.	2,779	230 32	" "
Cleopatra.....	Yacht.....	" 14.	104	13 32	Screw, Lake Ontario.
Home Rule.....	Tug.....	" 15.	81	11 48	" Detroit River.
Juno.....	Freight ..	" 15.	288	28 04	" Duluth and Montrea
Lurline.....	Yacht ..	" 15.	66	10 28	" Detroit River.
Saginaw.....	Tug.....	" 15.	357	33 56	" "
Wales.....	"	" 15.	350	33 00	" "
City of Chatham.....	580	" 16.	341	35 28	" Chatham and Detroit.
Imperial.....	204	" 16.	150	20 00	" Sarnia and Sandusky.
White Star.....	Coasting Lake....	" 19.	451	44 08	Paddle, Lake Ontario.
Sarnia.....	Tug.....	" 20.	85	11 80	Screw, Lake Huron.
Hiawatha.....	Yacht.....	" 21.	46	8 68	" Toronto Bay.
Primrose.....	900	" 21.	189	23 12	Paddle, "
Thistle.....	345	" 21.	78	11 24	" "
Garden City.....	760	" 29.	637	58 96	" Lake Ontario.
Kate.....	Yacht.....	" 30.	22	6 76	Screw, Kingston and vicinity.

*Dues and fees for 1900, 1901 and 1902.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—West Ontario Division—Continued.

BOILERS AND MACHINERY-- Continued.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Cruiser.	Yatch...	May 31..	55	9 40	Screw, Lake Ontario.
A. J. Tymon (Coasting Lake. ...)	448 300	June 7	194	23 52	" "
Urania.	500	" 10..	898	79 84	Paddle, Lake Erie.
Pittsburg.	500	" 10..	1,349	115 92	" Sandusky and Soo.
Dredge Frank.	Dredge...	Not issued	185	19 80	Harbours on Georgian Bay.
Arbutus.	Tug. ...	June 17..	49	8 92	Screw, Lake Huron.
Hiawatha.	300	" 18.	163	21 04	" St. Clair River.
Morning Star.	Tug. ...	" 28.	5	5 40	" Toronto Bay.
Clark Bros.	200	" 30..	92	12 36	" "
Gordon Jerry.	Freight ..	" 30..	124	14 92	" Lake Ontario.
Arlington.	100	" 30..	23	6 84	" Toronto Bay.
Total			4,5156	4,351 76	
		1902.			
Maid of the Mist.		July 16..	99		Screw, Niagara River.
Louise.		Not issued	84		" Lake Erie.
Superior.		June 14..	251		" Buffalo and Crystal Beach.
City of Holland.		Aug. 24..	439		" Duluth and Prescott.
Victoria.		Sept. 17..	192		" Windsor and Detroit.
Transport.		" 17..	1,595		Paddle " "
Michigan Central.		" 17..	1,522		" " "
Transfer.		" 18..	1,511		" " "
Wyandotte.		" 20..	320		Screw, Lake Erie to Huron.
Fortune.		" 24..	200		" Windsor and Detroit.
Ariel.		" 25..	202		" Walkerville "
Welcome.		Oct. 4..	213		" Port Huron and Windsor.
Niagara.		" 24..	213		" Buffalo and Fort Erie.
Shenango No. 1.		Not issued	1,942		Twin screw, Lake Erie.
Omar D. Conger.		"	196		Screw, Detroit River.
		1903.			
Excelsior.		May 16..	229		" "
Sappho.		" 16..	224		" "
Promise.		" 17..	473		" "
Garland.		" 17..	248		" "
Pleasure.		" 17..	490		" "
Arundell.		" 17..	339		" "
Ariel.		" 17..	202		" "
Tashmor.		" 26..	1,345		Paddle " "
City of Toledo.		" 26..	1,004		" " "
Idlewild.		June 9..	363		" " "
Greyhound.		" 9..	1,392		" " "
Columbia.		" 9..	960		Screw " "
City of the Straits.		" 9..	1,095		Paddle, Sandusky and Soo.
Sailor Boy.		" 10..	163		Screw, Detroit River.
Darius Cole.		" 13..	538		Paddle, Buffalo and Crystal Beach.
Pennsylvania.		" 13..	747		" Lake Erie.
Crystal.		" 14..	552		" Buffalo and Crystal Beach.
James Beard.		" 18..	87		Screw, Port Huron and Sarnia.
Frank E. Kirby.		" 19..	533		Paddle, Detroit and Sandusky.
Total			19,972		

JOHN DODDS,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
M. A. Bennett.....	Tug	July 4..	34	7 72	Screw, Toronto Bay.
Morning Star	"	" 5..	5	5 40	" "
		1901.			
J. L. Beckwith	"	Oct. 31..	61	9 88	" Sault River.
Florence M.	"	Not issued			" "
Sea Gull	"	"			" "
		1902.			
Venetta	Yacht	July 16..	31	7 48	" Georgian Bay.
City of Windsor	172	" 17..	511	48 88	" Collingwood to Sault Ste-Marie.
Viola	Yacht	" 17..	68	10 44	" Georgian Bay.
J. H. Jones	250	" 18..	152	20 24	Georgian Bay and Lake Huron.
Nipissing	313	" 24..	275	30 00	Paddle, Muskoka Lake.
Jennie Wilson	Tug	" 25..	7	5 56	Screw " "
Deverish	Yacht	" 25..	3	5 24	" " "
Ontario	Tug	" 25..	11	5 88	" " "
Ethel May	Yacht	" 25..	13	6 04	" " "
*Llano	"	Not issued	11	11 76	" " "
Wawonaissa	Tug	July 26..	7	5 56	" " "
Naiad	Yacht	" 26..	29	7 32	" " "
Ina	"	Not issued	14	6 12	" " "
Theresa	Tug	July 26..	26	7 08	" " "
Kate Murray	"	" 26..	3	5 24	" " "
Manolia	Yacht	" 26..	6	5 48	" " "
Southwood	Tug	" 27..	19	6 52	" " "
Wapenao	Yacht	" 27..	5	5 40	" " "
Secret	"	" 27..	9	5 72	" " "
Flyer	18	" 27..	4	5 32	" " "
Allena May	Tug	" 27..	16	6 28	" " "
Onagonah	Yacht	" 30..	19	6 52	" " "
Marie	Tug	" 31..	12	6 04	" Parry Sound and vicinity.
*Halcro	Yacht	" 31..	8	11 28	" " "
Florence Main	100	Aug. 2..	79	11 32	" Muskoka Lakes.
City of Bala	Pass	Not issued	74	10 92	" " "
		1901.			
Algoma	455	Oct. 31..	157	20 56	" Point Iroquois to Killarney.
Advance	9	Aug. 13..	1,031	90 48	" Quebec to Duluth.
Stilletto	30	" 13..	14	6 12	" Waubaushene to Moose Point.
C. W. Chamberlain	Freight ..	" 14..	385	35 80	" Quebec to Duluth.
Ottawa	8	" 15..	2,431	202 48	" " "
Wanda	Yacht	Not issued	12	5 96	" Muskoka Lakes.
Phoenix	Tug	Aug. 19..	29	7 32	" Huntsville and vicinity.
Empress Victoria	100	" 19..	106	16 48	" " "
Gem	40	" 20..	9	5 72	" " "
Lady of the Lakes	Tug	Not issued	10	5 80	" Lake of Bays.
Mary Louise	40	Aug. 21..	64	10 12	" " "
Florence	Tug	" 21..	27	7 16	" " "
Equal Rights	Yacht	" 22..	6	5 48	" " "
†Herbert M	Tug	Not issued	26	77 88	" Hollow Lake.
Joe	Pass	"	57	9 56	" Huntsville and vicinity.
Oriole	"	"	75	11 00	" Muskoka Lakes.
Lady Franklin	"	"	5	5 40	" Sparrow Lake and vicinity.
Enterprise	305	Aug. 28..	148	19 84	Twm scr., Lakes Simcoe and Couchiching.
Annie C. Hill	Yacht	Not issued	14	6 12	Screw, Lake Simcoe.
Minota	"	Aug. 28..	29	7 32	" Lakes Simcoe and Couchiching.

* Dues and fees for 1900 and 1901.

† Dues and fees for 1890-1-2-3-4-5-6-7-8-9-1900 and 1901.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—Western Ontario Division—*Continued.*BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
1901.				\$ cts.	
Agnes	21	Aug. 28	14	6 12	Screw, Belle Ewart to Roaches Point.
Evelyn	Tug	Sept. 11	85	11 80	" Georgian Bay.
S. R. Norcross	"	" 12	20	6 60	" French River.
Copmaning	"	" 13	18	6 44	" "
J. F. O'Brien	25	" 17	59	9 72	" Byng Inlet and vicinity.
Penetang	Tug	Not issued	102	13 16	" Georgian Bay.
Margherita	Yacht	Sept. 19	31	7 48	" "
City of Owen Sound	247	" 20	754	68 32	Paddle, Collingwood to Sault Ste. Marie
G. P. McIntosh	Tug	" 21	58	9 64	Screw, Georgian Bay.
Sandford	"	Oct. 14	56	9 48	" "
Port Elgin Queen	"	" 15	37	7 96	" "
Sea King	Fish'g tug	" 15	26	7 08	" "
Daisy	Tug	Not issued			" "
1902.					
Chueas	Fish'g Tug	Oct. 18	28	7 24	" " and Lake Huron.
*Juno	"	Not issued	28	21 72	" " "
*Lizzie May	"	Oct. 18	18	19 32	" Lake Huron.
W. H. Sickold	"	Not issued	22	6 76	" "
*Sea Gull	"	"	19	19 56	" "
Sea Queen	"	"	18	6 44	" "
Edna Ivan	9	Oct. 19	54	9 32	" Killarney to Cockburn Island.
Elite	Fish'g Tug	Not issued	22	6 76	" Lake Huron.
Everard	"	"	25	7 00	" "
John McKay	"	"	34	7 72	" "
Vixen	"	"	68	10 44	" "
Siesta	Yacht	Oct. 22	99	12 92	" Sault and vicinity.
J. L. Beckwith	Tug	" 22			" "
Glyn	"	" 23	20	6 60	" "
W. A. Rooth	"	" 23	52	9 16	" "
Bertha Endress	"	Not issued	32	7 56	" "
R. A. McLean	"	Oct. 24	30	7 40	" "
General Weitzel	"	Not issued	32	7 56	" "
Islander	"	"	6	5 48	" "
Pauline Hickler	"	Oct. 25	50	9 00	" "
Dredge Gladiator	Dredge	Not issued			Sault.
Algoma	650	Oct. 26			Screw, Point Iroquois to Thessalon
Iota	Yacht	" 26	6	5 48	" Sault and vicinity.
N. Dymont	Tug	" 29	59	9 72	Twin-screw, Thessalon and vicinity.
Killarney Belle	Fish'g Tug	" 29	28	7 24	Screw, Thessalon and vicinity.
E. P. Sawyer	Tug	" 30	52	9 16	" Sault River.
Jas. McKeon	"	" 30	36	7 88	" Blind River.
Fanny Arnold	31	" 30	73	10 84	" Killarney to Sault Ste-Marie
Albert Wright	12	" 30	29	7 32	" Johns Island and vicinity.
P. S. Heidsordt	Tug	" 31	45	8 60	" Spanish River and vicinity.
Stella	Fish'g Tug	" 31	16	6 28	" North Channel.
Surprise	"	Nov. 1	19	6 52	" Gore Bay and vicinity.
Dispatch	Tug	Not issued	33	7 64	" Georgian Bay and North Channel.
Fred. Davidson	40	Nov. 2	43	8 44	" Killarney to Sault Ste-Marie.
B. M. Fraser	40	" 2	50	9 00	" " "
Scotch Thistle	30	" 2	17	6 36	" Killarney to Algoma Mills.
E. Blake	Tug	Not issued	22	6 76	" North Channel.
J. G. Gidley	"	"	57	9 56	" "
Molly S.	30	Nov. 4	45	8 60	" Thessalon to Killarney.
Welcome	Tug	Not issued	21	6 68	" North Channel.
Helen S.	18	Nov. 6	86	11 88	" French River to Algoma Mills.
Cynthia	Fish'g Tug	" 25	35	7 80	" Georgian Bay.
Orcadia	"	" 26	26	7 08	" "
Dalton McCarthy	"	Not issued	54	9 32	" "
Jas. Storey	Tug	Nov. 27	49	8 92	" "

* Dues and fees for 1899-1900 and 1901.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Bannockburn.	10.	Mar. 26..	1,620	137 60	Screw, All lakes and rivers.
†Annie M.	Fish'g Tug	" 26..	33	15 28	" Georgian Bay.
Hugh S.	"	" 26..	24	6 92	"
Rosedale.	10.	" 27..	1,507	128 56	" All lakes and rivers.
Algonquin.	16.	" 27..	1,806	152 48	" Duluth to Prescott.
Minnie M.	468.	" 31..	613	57 04	" Toledo to Sault Ste-Marie.
Ossifrage. (River. ...)	550.	" 31..	632	58 56	"
(Lake. ...)	447.	" 31..	36	7 88	" Sault and vicinity.
Imperial.	Tug.	" 31..	50	9 00	"
James Norris.	"	April 1..	46	8 68	"
W. L. Davis.	"	Not issued	198	23 84	" Sault Ste-Marie to Collingwood.
Telegram.	200.	April 2..	89	12 12	" Manitoulin Isd. to Michipicoten.
Superior.	32.	" 2..	28	7 24	" Lake Superior.
W. J. Emerson.	Fish'g Tug	" 2..	40	8 20	" Sault and vicinity.
Commodore.	Tug.	" 3..	148	19 84	" Montreal to Duluth.
Philadelphia.	40.	" 3..	8	5 64	" Sault and vicinity.
Florence M.	Tug.	" 3..	76	11 08	" Lake Superior.
C. E. Ainsworth.	Fish'g Tug	" 4..	122	17 76	" Thessalon to Sault Ste-Marie.
C. H. Merritt.	300.	" 4..	26	7 08	" Lake Superior.
Gordon Gauthier.	Fish'g Tug	" 4..	483	46 64	" Peninsular Harbour to Collingwood
H. R. Dixon.	379.	April 5..	20	13 20	" Georgian Bay.
*Beather Belle.	Fish'g tug	" 8..	23	6 84	"
Agnes.	Tug.	" 9..	107	13 56	"
Thomas Maitland.	"	" 9..	2,269	189 52	" Owen Sound to Fort William.
Athabaska.	500.	" 10..	2,282	190 56	"
Alberta.	500.	" 10..	2,616	217 28	"
Manitoba.	500.	" 10..	1,014	89 12	" Collingwood to Duluth.
Germanic.	500.	" 11..	1,578	134 24	"
Majestic.	638.	" 28..	782	70 56	Paddle, Penetanguishene to Sault Ste-Marie
City of Toronto.	394.	" 11..	1,387	118 96	Screw, Collingwood and Duluth.
City of Collingwood.	391.	" 11..	974	85 92	" " Sault Ste-Marie.
City of Midland.	419.	" 11..	683	62 64	"
Atlantic.	300.	" 11..	3,330	274 40	" Duluth and Lake Ports.
Huronie.	563.	" 18..	93	12 44	" Georgian Bay.
Saucy Jim.	Tug.	" 12..	36	7 88	"
Beatrice M.	Fish'g tug	" 12..	428	42 24	Paddle, Collingwood to Sault Ste-Marie.
Britannic.	277.	" 12..	44	8 52	Screw, Georgian Bay.
Severn.	Tug.	" 14..	51	9 08	"
A. V. Crawford.	"	" 15..	256	25 48	"
Onaping.	"	" 15..	50	9 00	"
Lillie.	"	" 15..	46	8 68	" Meaford Harbour.
S. Kneeland.	"	" 17..	40	8 20	" Georgian Bay.
R. J. Morrell.	Fish'g tug	" 17..	18	6 44	"
Mizpah.	Yacht.	" 17..	18	6 44	"
Laura M.	Fish'g tug	Not issued	21	6 68	"
Creole.	Tug.	April 22..	94	12 52	"
Signal.	"	" 22..	24	6 92	"
Dolphin.	"	" 22..	16	6 28	"
Bruce.	"	Not issued	51	9 08	" Midland Harbour.
Rover.	"	April 23..	187	19 96	Dredge
Dredge 9.	Dredge.	" 23..	75	10 84	Screw, Georgian Bay.
Minitaga.	Tug.	" 23..	88	12 04	" Penetanguishene to Collingwood.
John Lee, Sr. (Lake. ...)	200.	" 24..	39	8 12	" Point au Baril.
(Coasting. ...)	291.	" 24..	36	7 88	" Georgian Bay.
Masonic.	38.	" 24..	275	27 00	" all lakes and rivers.
Alice G.	Fish'g tug	" 29..	146	19 68	" Toronto and vicinity.
Lillie Smith.	Freight.	May 2..	41	8 28	" Georgian Bay.
Mazepna.	Pass.	Not issued	6	5 48	" Mill Lake.
J. H. McDonald.	Fish'g tug	May 13..	11	5 88	" Parry Sound and vicinity.
Pearl.	21.	" 15..			
Ophir.	Yacht.	" 15..			

* Dues and fees for 1901-1902.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c., West Ontario Division—Continued.

BOILERS AND MACHINERY — Concluded.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1903.		\$ cts.	
Edna.....	110.....	May 15..	55	9 40	Screw, Penetanguishene to Pt. au Baril.
Fred. A. Hogson	Tug.,	" 20..	63	10 04	" Georgian Bay.
A. Seaman	"	" 20..	76	11 08	" "
*Annie Siemon.....	"	" 21..	19	13 04	" " and Lake Huron.
Joe Milton	200.....	" 21..	93	12 44	" "
G. P. McIntosh	Tug.,	" 22..	58	9 64	" "
Sea King.....	Fish'g tug	" 22..	26	7 08	" "
W. L. Davis.....	Tug.,	June 9..			" Sault Ste-Marie and vicinity.
John Haggart	200.....	" 9..	202	24 16	" Thessalon to Sault Ste-Marie.
Espanola.....	Pass.....	Not issued	7	5 56	" Webbwood to Spanish Falls.
John J. Noble.....	Fish'g tug	June 12..	33	7 64	" Georgian Bay.
		1902			
Kenozha.....	209.....	Dec. 31..	225	26 00	" Muskoka Lakes.
		1903			
Muskoka.....	300.....	June 18..	197	23 76	" "
Medora	360.....	" 18..	377	38 16	" "
Gravenhurst.....	Tug.,	" 19..	29	7 32	" "
Nymph	Pass.....	Not issued	29	7 32	" "
Priscilla.....	Yacht.....	June 19..	20	6 60	" "
Nipissing.....	310.....	" 19..	275	30 00	Paddle, "
Bertha May	Tug.,	" 19..	20	6 60	Screw, "
Constance	40.....	" 20..	52	9 16	" "
Ahmie.....	40.....	" 20..	43	8 44	" "
City of Bala	40.....	" 20..	74	10 92	" "
Oriole.....	100.....	" 20..	75	11 00	" "
Comet.....	Tug.,	" 20..	20	6 60	" "
Mink.....	40.....	" 20..	56	9 48	" Muskoka Lakes.
Nymoca.....	40.....	" 21..	25	7 00	" "
Wenonah....	102.....	" 23..	163	20 88	" and pad., Burk's Falls to Ahm. H.
Glenrosa.....	Tug.,	" 23..	63	10 04	" Magnetawan River.
Wanita.....	109.....	" 23..	44	8 52	" Burk's Fall to Ahmic Harbour.
Emulator.....	Tug.,	" 23..	25	7 00	" Magnetawan River.
Lorna Doone.....	Yacht.....	" 25..	5	5 40	" Lakes Simcoe and Couchiching.
Longford.....	150.....	" 25..	53	9 24	" " " "
Soncil.....	Yacht.....	" 25..	14	6 12	" " " "
Islay.....	348.....	" 25..	175	22 00	" " " "
Lilly.....	209.....	Not issued	22	6 76	" Victoria Harbour.
Una.....	Yacht.....	June 27..	22	6 76	" Georgian Bay.
City Queen.....	180.....	" 27..	69	10 52	" Penetang to P. au Baril (Inside).
D. L. White.....	Tug.,	" 27..	56	9 48	" Georgian Bay.
Voyageur	"	" 27..	44	8 52	" "
Home Rule.....	Yacht.....	" 28..	3	5 24	" "
Mabel G.....	"	" 28..	10	5 80	" "
*C. M. Bowman	Tug.,	" 30..	88	24 08	" "
Roy.....	Yacht.....	" 30..	6	5 48	" "
*Beaver.....	Tug.,	" 30..	29	14 64	" "
Tadenac.....	Yacht.....	Not issued	9	5 72	" "
Minnicog.....	40.....	June 30..	35	7 80	" enetang to Point au Baril.
Penetang.....	Tug.,	" 30..	102	13 16	" Georgian Bay.
Total			38,987	4,432 96	

* Dues and fees for 1901-02.

E. W. McKEAN,
Steamboat Inspector,
Toronto.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Class of Vessel and where employed.
1902.				
International.....	300.	June 20...	144	Screw, Sault Ste. Marie.
1903.				
Mascotte.....	498.....	April 1. ..	162	Twin screw, Sault Ste. Marie
Total.....			306	

E. W. McKEAN,
Steamboat Inspector,
Toronto.

STEAM Vessels not Inspected for the Year ended June 30, 1902.

WEST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. — Why not Inspected and Class of Vessel.
R. C. Britton.....	213	149	Screw, freight.
Mary Arnott.....	8	6	" tug.
United Lumberman.....	309	259	" freight.
Mary R.....	44	30	" tug.
Charles E. Armstrong.....	49	33	" "
Golden City.....	35	26	" "
Nellie Bly.....	13	7	" fishing tug.
Escort.....	40	27	" tug.
M. R. Mitchell.....	40	27	" "
A. D. Cross.....	47	32	" "
Augusta.....	57	31	" "
Canada.....	312	209	" passenger.
Electric.....	49	29	" yacht.
Ranger.....	8	5	" tug.
International.....	851	559	Twin screw, ry. car ferry
Rosseau.....	53	36	Screw, tug.
Islander.....	165	78	" passenger.
Conqueror.....	25	17	" tug.
Maggie May.....	46	31	" fishing tug.
Jas. Playfair.....	26	18	" "
Primrose.....	23	16	" "
Charlie M.....	50	30	" passenger.
Queen of the Isles.....	40	27	" tug.
Waubashene.....	97	47	" "
J. C. Else.....	33	21	Paddle "
Gertie C.....	15	10	Screw "
Mayflower.....	27	17	" passenger.
Bertha.....	18	12	" "
Harold Gauthier.....	9	6	" fishing tug.
Carlton.....	8	6	" tug.
Bobs.....	38	26	" passenger.
Lerna Doone.....	26	18	" "
Pilot.....	20	48	" tug.

Inspected since
June 30, 1902.

2-3 EDWARD VII., A. 1903

STEAM Vessels not Inspected, &c., West Ontario Division—*Concluded.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Gross Tonnage.	Reg-istered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Geraldine.....	65	45	Screw, tug.
Dorothe.....	8	6	" yacht.
W. S. Oldfield.....	15	10	" tug.
Emma.....	146	94	" passenger.
Maud.....	40	27	" "
Shawanaga ..	96	65	" tug.
Torpedo.....	8	6	" "
Lillian.....	5	4	" "
Odessa.....	12	8	" "
Albani.....	5	4	" yacht.
Topsy.....	9	6	" tug.
Sea Gull of Collingwood ..	9	6	" "
Stiletto.....	14	10	" passenger.
Euna.....	6	4	" tug.
Vick.....	13	9	" "
Annie Moiles.....	71	49	" "
Ariadne.....	38	26	" "
M. G. McDonald.....	29	20	" fishing tug.
Ella Taylor.....	34	23	" tug.
Sweet Mary.....	14	9	" "
Ethel.....	13	9	" "
Island Belle.....	31	21	" "
W. E. Gladstone.....	59	40	" "
Viper.....	34	19	Screw, tug.
Siesta (of Toronto).....	3	2	" yacht.
Charlton.....	389	265	" tug.
Glenora.....	17	10	" "
John Williams.....	14	10	" "
Cecele.....	11	8	" "
Clara Hickler.....	42	32	" "
Sonntag.....	7	5	" yacht.
A. M. Petrie.....	20	13	" "
Agnes C.....	20	10	" tug.
Yacht Maida.....	2	2	" "
Ida.....	21	6	" yacht.
Ripple (of Chatham).....	15	11	" tug.
Ripple (of Collingwood).....	5	4	" "
Ida Bell.....	6	3	" fishing tug.
Nina.....	11	9	" tug.
Adrelia.....	15	10	" passenger.
Ocean Lilly.....	3	2	" tug.
Walter Scott.....	26	18	" "
Rambler.....	6	4	" "
Advance.....	72	49	" "
Shamrock.....	14	10	" fishing tug.
J. C. Clark.....	145	99	" passenger.
City of Mount Clemens.....	102	69	" freight.
Camilla.....	54	37	" passenger.
Maggie McLean.....	37	25	" tug.
Harvey Neelon.....	65	47	" "
Lillie May.....	10	7	" "
John J. Long.....	201	137	" passenger.
Cambria.....	937	590	Paddle, passenger.
Luther Westover.....	127	80	" tug.
L. Shickluna.....	16	11	Screw "
Kathleen.....	110	72	" passenger.
Frankie.....	24	16	" tug.
Maud S.....	14	11	" "
Uncle Jim.....	11	8	" fishing tug.
	2,783	1,789	

JOHN DODDS, } *Steamboat Inspectors,*
E. W. McKEAN, } *Toronto, Ont.*

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1902.

WEST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1902.		8 cts.	
Clark Bros.	200.	July 1..	92	12 36	Screw, Hamilton and Whitby
Union	280.	" 3..	267	29 36	Paddle, Black Rock and Ft. Erie.
Arlington.	100.	" 5..	23	6 84	Screw, Toronto Bay.
Scow No. 1	120.	" 5..		10 00	Scow ..
Rosedale	18.	" 9..	1,507	128 56	Screw, All lakes.
Abino	40	" 11..	8	5 64	" Niagara River.
Urania.....	500.	" 17..	898	79 84	Paddle, Lake Erie ports.
City of Chatham.....	580.	" 18..	341	35 28	Screw, Chatham and Detroit.
Agnes.....	21.	" 19..	14	6 12	" Belle Ewart and Rouche Point.
Islay.....	348.	" 25..	175	22 00	" Lake Simcoe.
Enterprise.....	305.	" 25..	148	19 84	" ..
Longford.....	150.	" 26..	53	9 24	" ..
Stiletto.....	30.	" 26..	14	6 12	" Waubaushene and Moose Pt.
Niagara.....	300	" 24..	412	40 96	" Lake Ontario ports.
Advance.....	9.	" 29..	1,031	90 48	" All lakes.
Julian V. O'Brien.....	25.	Aug. 3..	59	9 72	" Georgian Bay.
Lady Franklin.....	5.	Not issued			
Algoma.....	455.	Aug. 13..	157	20 56	" Pt. Iroquois and Killarney.
Ottawa.....	8.	" 15..	2,431	202 48	" All lakes.
Great Western.....	200.	" 30..	1,080	94 40	Paddle, Windsor and Detroit.
Lansdowne.....	200.	" 30..	1,571	133 68	" ..
Huron.....	245	" 31..	1,052	92 16	Screw ..
Scotia.....	33.	Not issued	13	6 04	" Amherstburg and Bois Blanc.
Comfort.....	40.	Sept. 4..	14	6 12	" Sarnia.
City of Dresden.....	100.	" 5..	194	23 50	" Windsor and Lake Erie ports.
Islander.....	107.	" 17..	160	21 20	" Muskoka Lakes.
Nipissing.....	313.	" 16..	275	30 00	Paddle ..
Oriole.....	100.	" 17..	75	11 00	Screw ..
Florence Main.....	100.	" 18..	79	11 32	" ..
City of Bala	40.	" 18..	74	10 92	" ..
Mink.....	40.	" 19..	56	9 48	" ..
Constance.....	40.	" 19..	52	9 16	" ..
Flyer.....	18.	" 19..	4	5 32	" ..
Medora.....	350.	" 20..	299	31 92	" ..
Kenozha.....	319.	" 20..	225	26 00	" ..
Ahnic.....	34.	" 20..	43	8 44	" ..
Charlie M.....	30.	" 20..	50	9 00	" ..
Muskoka.....	300.	" 21..	197	23 76	" ..
Nymoca.....	40.	" 21..	25	7 00	" ..
Empress Victoria.....	100.	" 23..	106	16 48	" ..
Mary Louise....	40.	" 23..	64	10 12	" ..
Gem.....	40.	" 24..	9	5 72	" ..
Joe.....		Not issued			
Wenona.....		"	161	20 88	Paddle and screw, Magnetawan.
Wanita.....	125.	Sept. 25..	44	8 52	Screw, Magnetawan River.
Ossifrage.....	(447 L. 1 550 R.)	Oct. 19..	632	58 56	" Toledo and Sault St. Marie.
Telegram.....	200.	" 21..	198	23 84	" Soo and Peninsular Harbour.
Superior	32.	" 21..	89	12 12	" Manitoulin and Michipicoten.
Minnie M.....	(463 L. 1 598 C.)	" 22..	613	57 04	" Soo and Michipicoten.
Algoma.....	650.	" 23..	157	20 56	" Thessalon.
City of Owen Sound.....	247.	" 24..	754	68 32	Paddle, Collingwood and Soo.
Philadelphia.....	40.	" 25..	148	19 84	Screw, All lakes.
Fanny Arnold.....	31.	" 28..	73	10 84	" Killarney and Soo.
Albert Wright.....	12.	" 29..	29	7 32	" Thessalon and Little Current.
Molly S.....	30.	" 30..	45	8 60	" Killarney.
B. M. Fraser.....	40.	" 30..	50	9 00	" Soo and Killarney.
Fred Davidson.....	40.	" 31..	43	8 44	" ..
Scotch Thistle.....	30	" 31..	17	6 36	" Algoma Mills and Killarney.
Eagle.....		Not issued	12	5 96	" Pt. Edward and Pt. Huron.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*HULL INSPECTION—*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1903.		\$ cts.	
Helen S.	18	Nov. 1..	86	11 88	Screw, Algoma Mills and French River.
Edna Ivan.	9	" 1..	54	9 32	" Killarney and Coburn Island.
Lakeside.	(349 L) (524 C.)	April 1..	348	35 84	" Toronto and Lake Ontario ports.
D. R. Van Allan.	Freight ..	" 7..	318	30 44	" All lakes.
Macassa.	616	" 8..	459	44 72	" Toronto and Hamilton.
Arabian.	13	April 8..	1,073	93 84	" all lakes.
Germanic.	500	" 12..	1,014	89 12	" Collingwood and Duluth.
City of Toronto.	394	" 12..	782	70 56	Paddle, Penetang. and Soo.
Atlantic.	300	" 12..	683	62 64	Screw, Collingwood and Soo.
Majestic.	638	" 14..	1,578	134 24	" " and Duluth.
City of Collingwood.	391	" 14..	1,387	118 96	" " "
City of Midland.	419	" 15..	974	85 92	" " and Soo.
Britannic.	277	" 15..	428	42 24	Paddle, " "
Alberta.	500	" 16..	2,282	190 56	Screw, Owen Sound and Ft. William.
Athabasca.	500	" 16..	2,269	189 52	" " "
Manitoba.	500	" 17..	2,616	217 28	" " "
Ocean.	125	" 18..	684	62 72	" Montreal and Sarnia.
Persia.	150	" 18..	757	68 56	" " and Hamilton.
Cuba.	109	" 21..	931	82 48	" all lakes and rivers.
Tecumseh.	Freight ..	" 24..	840	72 20	" " "
Island Queen.	140.	" 25..	23	6 84	" Toronto Bay.
		1902.			
Lincoln.	511.	Oct. 31..	337	34 96	" Thessalon and Soo.
		1903.			
Midland Queen.	15	April 30..	1,993	167 44	" all lakes.
Rosedale.	10	" 30..	1,507	128 56	" " "
Lillie Smith.	Freight ..	May 2..	275	27 00	" " "
City of Windsor.	172	" 2..	511	48 88	" Collingwood and Soo,
United Lumberman.	Freight ..	" 6..	379	26 92	" all lakes and rivers.
Chicora.	872	" 12..	931	82 48	Paddle, Lake Ontario.
Ada Alice.	125	" 12..	60	9 80	Screw, Toronto Bay.
United Empire.	367	" 13..	1,961	164 88	" Windsor and Duluth.
Hiawatha.	300	" 14..	163	21 04	" Sarnia and St. Clair river.
Juno.	Freight ..	" 15..	288	28 04	" all lakes and rivers.
Imperial.	204	" 16..	150	20 00	" Sarnia and Sandusky
Michigan.	500	" 16..	1,730	146 40	Paddle, Windsor and Detroit.
Ontario.	500	" 17..	1,615	137 20	" " "
City of Chatham.	580	" 17..	341	35 28	Screw, Chatham and Detroit.
Seguin.	20	" 19..	818	73 44	" all lakes and rivers.
Luella.	110	" 20..	38	8 04	" Toronto Bay.
Shamrock.	412	" 20..	154	20 32	Paddle, " "
Mayflower.	900	" 20..	189	23 12	" " "
Primrose.	900	" 20..	189	23 12	" " "
Thistle.	345	" 20..	78	11 24	" " "
John Hanlan.	185	" 21..	38	7 96	Screw, " "
White Star.	(468 L.) (702 C.)	" 21..	451	44 08	Paddle, Toronto and Lake Ontario.
Toronto.	1,000	" 21..	2,779	230 32	" " " "
Huronie.	563	" 22..	3,330	274 40	Screw, Windsor and Duluth.
Hope.	300	" 28..	170	21 60	" Buffalo and Fort Erie.
Maid of the Mist.	80	" 28..	62	9 96	" Niagara Falls.
Ongiara.	244	" 29..	98	12 84	" Niagara River.
Corona.	1,456	" 29..	1,274	109 92	Paddle, Toronto and Lake Ontario.
Melbourne.	125	" 31..	894	79 58	Screw, Toledo and Montreal.
Hiram R. Dixon.	379	June 6..	483	46 64	" Collingwood and Peninsular Pt.
John Haggart.	200	" 5..	202	24 16	" Thessalon and Soo.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
C. H. Merritt	300.....	Oct. 21..	122	17 76	Screw, Thessalon and Soo.
Espanola.. ..	22.....	" 21..	7	5 56	" Spanish River.
		1903.			
A. J. Tynon	(300 L.) (448 C.)	June 14..	194	23 52	" Lake Ontario ports.
Chippewa	2,000.. ..	" 13..	1,514	129 12	Paddle, Toronto and Lake Ontario.
Modjeska.....	801.	" 16..	678	62 24	Screw, Toronto and Hamilton.
Kingston.....	1,000.....	" 17..	2,925	242 00	Paddle, Toronto and Lake Ontario.
Garden City.....	760.....	" 18..	637	58 96	" " "
Algonquin.....	16.....	" 19..	1,806	152 48	Screw, all lakes and rivers.
Pittsburg	500.....	" 24..	1,349	115 92	Paddle, Buffalo and Soo.

WM. EVANS,
Hull Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels inspected in Canada but registered elsewhere for the Year ended
June 30, 1902.

WEST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Class of Vessel and where employed.
1902.				
Frank E. Kirby.....	975	July 1..	532	Paddle, Lake Erie and Detroit River.
Maid of the Mist.....	125	" 3..	99	Screw, Niagara Falls.
1901.				
Superior.....	500	Oct. 1..	251	" Buffalo and Crystal Beach.
1902.				
City of Holland.....	460 1 680c	Aug. 21.	439	" all Lakes.
Crystal	845	" 22..	551	Paddle, Buffalo and Crystal Beach.
Eagle	512	" 22..	183	Screw " " "
Pennsylvania.....	711,11,000c	" 23..	747	Paddle, all Lakes.
Excelsior.....	250	" 26..	229	Screw, Detroit and Windsor.
Victoria.....	250	" 26..	192	" " "
Fortune.....	427	" 26..	200	" " "
Pleasure	1,688	" 27..	490	" Amherstburg and Pt. Huron.
Sappho	550	" 27..	224	" " "
Promise.....	1,000	" 27..	473	" " "
City of Toledo.....	1,120	" 28..	1,004	Paddle, Toledo and Southampton.
Ariel.....	226	" 28..	202	Screw, Walkerville and Detroit.
Idlewild	800	" 28..	363	Paddle, Toledo and Pt. Huron.
Transfer	233	" 29..	1,311	Paddle and screw, Detroit River.
Transport	256	" 29..	1,595	" " "
Michigan Central.....	281	" 29..	1,522	" " "
Greyhound	1,353	" 30..	621	" Sarnia and Toledo.
Wyandotte.....	904	" 31..	320	" Lakes Erie and Huron.
Newsboy.....	381	" 31..	200	" Amherstburg and Pt. Huron.
Tashmoo.....	1,887	Sept. 3 .	1,344	Paddle " "
Welcome.....	266	" 3..	213	Screw, Pt. Huron and Windsor.
Grace Dormer.....	160	" 4..	66	" " Sarnia.
James Beard	66	" 4 .	87	" " "
International.....	300	Oct. 22..	144	" Bay Mills and Thessalon.
Mascotte....	498	" 23..	162	" Pt. Iroquois and Thessalon.
Niagara.....	345	Nov. 13..	214	" Buffalo and Fort Erie.
1903.				
City of the Straits	650	June 24..	1,094	Paddle, Sandusky and Soo.

WILLIAM EVANS,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1902.

EAST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1902.		\$ cts.	
Alert	150	July 2	56 38	9 48	Screw, Cos. Vict. and Peterboro.
Dickson.....			16 01	6 28	Paddle
Florence.....					Screw, pleasure yacht.
Wanda.....	30	June 20	38 61	8 12	" River St. Lawrence.
Jessie Bain..		July 5	66 58	10 36	" survey boat, Riv. St. Lawrence.
Rideau King.....	350	" 6	265 92	8 00	" Kingston and Ottawa.
Cygne.....	25	" 6	12 02	5 96	"
Kinerving .. .		" 1	145 40	16 60	" Rideau Canal and Lake.
City of Peterboro....	310	" 16	230 31	26 40	T.S., Rice Lake and tributaries.
Greyhound .. .	40	" 17	37 35	7 96	Screw, Cos. Vict. and Peterboro.
Express.....	20	" 17	3 90	5 32	"
Crandella .. .	300	" 17	266 20	29 28	Paddle
Marie Louise ..		" 17	32 19	7 56	Screw, tug, Lindsay waters.
Beaver		" 18	91 50	12 36	Paddle "
Waterwitch.....		" 18	17 70	6 44	Screw "
Manita.....	150	" 18	34 10	7 72	" Cos. Vict. and Peterboro.
Ogemah	150	" 19	71 75	10 76	Paddle
Calumet.....	30	" 19	21 87	6 76	Screw
Pearl.....	20	" 19	6 39	5 48	"
Stranger.....		" 19	53 41	9 24	" tug
Comet	35	" 20	7 60	5 64	"
Esturean	300	" 22	139 39	19 12	Paddle
Lady of the Lake....	38	" 22	32 95	7 64	Screw
Maple Leaf.....	25	" 22	26 08	7 08	"
Kawartha	25	" 23	16 69	6 36	" Kawartha Lakes.
Dawn		" 23	20 20	6 60	" tug, Kawartha Lakes.
Dauntless.....			3 38	5 24	"
Estelle		July 24	8 23	5 64	" pleasure yacht.
Majestic.....	185	" 24	67 77	10 44	" Cos. Vict. and Peterboro.
Sunbeam.....	210	" 24	104 92	16 40	"
Victoria		" 25	3 90	5 32	" tug "
White Star.....		" 25	8 8	5 72	"
Empress.....	224	" 25	84 48	11 72	"
Mollie		" 25	10 72	5 88	" pleasure yacht.
North Star.....	165	" 26	39 60	8 20	" Rice Lake and tributaries.
Beaver	75	" 26	18 00	6 44	"
Viper		May 20	7 50	5 64	" pleasure yacht.
Marie			3 22	5 24	"
Mildred		May 20	4 50	5 40	"
Ullacabula.....					"
Dorcas			2 51	5 24	" River St. Lawrence.
Naiad		June 20	15 41	6 20	" pleasure yacht.
Vesta		Aug. 15	7 80	5 64	"
Hydra		" 15	5 70	5 48	" fish tug, Riv. St. Lawrence.
Geraldine.....		" 20	17 90	6 44	" pleasure yacht.
Wenonah.....		" 20	5 59	5 48	"
Kilbernie.....		" 20	15 23	6 20	"
Nellie		" 21	6 82	5 56	"
Tropic.....	15	" 21	8 86	5 72	" Kingston and Ottawa.
Carnita					"
Lillian B.....	20	Aug. 22	3 76	5 32	" Carleton Place and Innesville.
Commodore .. .			3 06	5 24	"
Mary			2 83	5 24	" River St. Lawrence.
Jubilee.....	40	Aug. 24	53 94	9 32	" Morrisburg and Waddington.
Jopl.....	40	" 26	10 54	5 88	" Kingston and Prescott.
Sarah A.....			1 91	5 16	" River St. Lawrence.
Maggie May .. .		Aug. 29	29 03	7 32	" tug, canal and river.
Blue Bell.....		June 1	11 97	5 96	" pleasure yacht.
Dorothy.....	20	Aug. 1	10 09	5 80	" Trenton and Prescott.
Mary Ellen.....		" 15	20 22	6 60	" tug, canal and riv. St. Law.
Annie Barrett ..		" 15	41 89		"

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—East Ontario Division—*Continued.*BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Beaver		Aug. 15..	40·88	8 28	Screw, tug, canal and riv. St. Law.
Quebec		" 15..	108·31	13 64	" freight, canal and river.
Gracie	40	" 15..	10·50	5 88	Paddle, Cornwall and Dundee.
Princess Louise	40	" 15..	26·36	7 08	Screw, Kingston and Montreal.
Grenada	175	" 15..	57·00	9 56	" " "
Dredge "No 5"		" 15..	100·00	13 00	Spoon dredge, River St. Lawrence.
Mabel McDonald		" 15..	41·81	8 36	Screw, tug, " "
Dredge 'Central City';		" 15..	223·62	22 89	Spoon dredge, " "
D. P. Dey		" 15..	11·26	5 88	Screw, tug, " "
Alaska		" 15..	48·74	8 92	" " " "
Mona		" 15..	24·87	7 00	" " " "
Win Davis		" 15..	40·23	8 20	" " " "
Dredge St. Lawrence		" 15..	258·10	25 64	Spoon dredge, " "
" Ottawa		" 15..	219·95	22 60	" " " "
Ruth		" 15..	36·45	7 96	Screw, tug, " "
Dredge Ottomac		" 15..	195·65	20 68	Elevator dredge, " "
A. B. Cooke		" 15..	34·17	7 72	Screw, tug, " "
Dredge D. Stewart		" 15..	295·21	28 60	Spoon dredge, " "
Umbria		" 15..	42·98	8 44	Screw, tug, " "
John Hunter		" 15..	32·14	7 56	" " " "
Myra		" 15..	73·21	10 84	" " " "
International	150	June 20..	395·31	39 60	Twin screw, Prescott and Ogdensburg
Frontenac		Oct. 1..	110·76	13 88	Screw, tug, River St. Lawrence.
Alberta		Aug. 1..	122·43	14 76	" freight, River St. Lawrence.
Prince Edward		Oct. 1..	18·22	6 44	Paddle, Tyendinaga and Sophiasburg.
		1903.			
Pierrepoint	415	Mar. 24..	251·98	28 16	Paddle, Trenton and Prescott.
Hubert Larkin		" 24..	48·73	8 92	Screw, tug, canal and river.
C. W. Janes		" 25..	47·96	8 84	" " " "
Dredge Sir Hector		" 25..	355·39	33 40	Spoon dredge, River St. Lawrence.
" I.X.L.		" 25..	100·00	13 00	" " " "
Rosemount	10	" 27..	1,580·37	134 40	Screw, freight and pass., Great Lakes.
Nile		" 31..	96·30	12 68	" " River St. Lawrence.
Ranger	15	" 31..	13·83	6 12	" Trenton and Pictou.
Deseronto	85	" 31..	54·57	9 40	" " Prinyers Cove.
Reliance	25	" 32..	239·14	27 12	Twin screw, Chicago and Montreal.
Rescue	25	April 1..	52·29	9 16	Screw, Trenton and Prescott.
Ella Ross	300	" 1..	324·88	34 00	Paddle, Brighton and Prescott.
Resolute	25	" 1..	371·86	37 76	Twin screw, Chicago and Montreal.
Armenia	200	" 1..	109·99	16 80	Screw, Trenton and Dickenson Lnd'g
India		" 2..	976·49	83 08	" freight, Great Lakes.
Cheiftain		" 2..	434·68	39 80	Paddle, tug, River St. Lawrence.
D. D. Calvin		" 2..	749·53	65 00	Screw, freight, Great Lakes.
Aberdeen		" 5..	141·86	16 36	" " lake and river.
Lloyd S. Porter		" 10..	488·63	44 12	" " Great Lakes.
Iona	15	" 11..	231·53	26 56	" all lakes and rivers.
Glengarry		" 14..	732·41	63 56	" " "
David G. Thomson		" 12..	185·05	19 80	" tug, River St. Lawrence.
Alexandria	600	" 18..	863·15	77 04	Paddle, Charlotte and Quebec.
Reindeer	165	" 18..	58·29	9 64	Screw, Trenton and Prescott.
Varuna	240	" 19..	134·04	18 72	" " "
Bothnia		" 21..	833·36	71 64	" freight, Great Lakes.
Chance		" 22..	5·02	5 40	" pleasure yacht.
Glide		" 23..	77·96	11 24	" tug, River St. Lawrence.
Dauntless		" 24..	80·62	11 48	" " "
Martha	15	" 25..	2·42	5 16	" Kingston and Prescott.
Valeria	40	" 26..	51·55	9 16	" " "
North King	520	" 30..	872·95	77 84	Paddle, all lakes and rivers.
Rideau King	350	May 1..	265·92	29 28	Screw, Kingston and Ottawa.
John Milne		" 2..	108·53	13 72	" freight, lake and river.
Chub		" 3..	57·19	9 56	" " "

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—East Ontario Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Owen.....		May 6..	102·84	13 24	Screw, freight, lake and river.
America.....	600	" 7..	520·53	49 68	Paddle, Trenton and Montreal
Parthia.....		" 7..	198·13	20 84	" tug, River St. Lawrence
Jessie Bain.....		" 8..	66·58	10 36	Screw, survey boat, Riv. St. Lawrence
Where Now.....		" 10..	47·78	8 84	" pleasure yacht.
King Ben.....		" 12..	145·36	16 60	" freight, River St. Lawrence.
Argyle.....	800	" 15..	700·29	64 00	Paddle, Lake Ontario & R. St. Lawr.
Clenton.....			430·00	39 40	Screw, freight, Great Lakes.
Rideau Queen.....	300	May 20..	350·75	36 08	" Kingston and Ottawa.
Aletha.....	350	April 1..	171·27	21 68	" Trenton and Valleyfield.
Skylark.....		May 21..	43·29	8 44	" pleasure yacht.
Madge.....		" 22..	9·49	5 72	" "
Kismet.....		" 22..	5·42	5 40	" "
Annie Lake.....	40	" 22..	18·52	6 52	" Brighton and Prescott.
Carmana.....		" 23..	56·08	9 48	" pleasure yacht.
Mildred.....		" 23..	4·50	5 40	" "
Edmond.....		" 27..	39·10	8 12	" tug, canal and river.
Wm. Johnston.....		April 1..	94·72	12 60	" tug, River St. Lawrence.
Rival.....		" 1..	125·14	15 00	Paddle, tug "
Donnelly.....			318·91	33 52	" " "
Eva Belle.....		June 14..	10·10	5 80	Screw, fish patrol boat, Rideau.
Jessie Forward.....		" 16..	5·64	5 48	" pleasure yacht.
Water Lily.....		April 1..	95·09	12 60	" freight, River St. Lawrence.
Brockville.....	358	June 17..	190·75	23 28	" Kingston and Cornwall.
City of Belleville.....	250	" 17..	101·17	16 08	" Kingston and Prescott.
Antelope.....	40	" 17..	24·98	7 00	" Trenton and Prescott.
Victoria.....	186	" 17..	58·10	9 64	" " "
Dortha.....		" 18..	50·98	9 08	" pleasure yacht.
Albani.....		" 18..	57·83	9 64	" "
Lee.....	35	" 18..	8·73	5 72	" Kingston and Prescott.
Illicillewaet.....		" 19..	15·69	6 28	" pleasure yacht.
Leone.....	25	" 19..	4·26	5 32	" Kingston and Prescott
Kenneth.....		" 19..	4·11	5 32	" pleasure yacht.
Ellen.....	40	" 19..	25·10	7 00	" Kingston and Prescott
International.....		" 20..	395·31	39 60	Twin screw, Prescott & Ogdensburg.
Naiad.....		" 30..	15·41	6 20	Screw, pleasure yacht.
Total.....			20,429·18	2,449 89	

THOS. P. THOMPSON,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended June 30, 1902.

EAST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Pas-sengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Ins-pection Fees Paid.	Class of Vessels and where employed.
		1902.		\$ cts.	
I Wonder.	33	June 20..	16·11	Exempt ..	Screw, Kingston and Ogdensburg.
Gryphon.....			28·00	" ..	" ..
Niagara.....	40	June 20..	36·00	" ..	" Lake Coasting & R. St. Lawr'ce
Columbia ..	40	Aug. 29..	26·00	" ..	" Trenton and Ogdensburg.
Algoma	280	June 20..	92·06	" ..	" Cape Vincent & Ft. Covington.
Wm. Armstrong....	25	" 20..	181·24	" ..	" Car Ferry—Brockv. & Ogdens.
Idler.....	150	Aug. 1..	57·00	" ..	" all lakes and rivers.
		1903.			
New Island Wanderer	400	April 3..	123·00	" ..	" Kingston and Ogdensburg.
Islander ..	468	" 4..	118·61	" ..	" Paddle, Trenton ..
St. Lawrence..	645	May 8 ..	312·90	" ..	" Kingston ..
Gen. W. B. Franklin..	25	June 4..	11·35	" ..	" Screw, ..
Virginia.....	35	" 4..	21·00	" ..	" ..
I Wonder.....	32	" 4..	16·11	" ..	" ..
Sirius	46	" 4..	22·00	" ..	" ..
Spry.....	25	" 5..	4·39	" ..	" ..
Capt. Visgar.....	110	" 5..	29·23	" ..	" ..
Castanet ..	125	" 5..	34·32	" ..	" ..
H. P. Bigelow.....	100	" 5..	46·00	" ..	" ..
Valetta ..	38	" 6..	27·84	" ..	" Trenton ..
Niagara.....	40	" 9..	36·00	" ..	" ..
New York ..	730	" 13..	294·87	" ..	" Paddle, Kingston ..
Ramona.....	150	" 13..	57·07	" ..	" Screw, Trenton ..
Wm. Armstrong.....		" 18..	181·24	" ..	" Brockville and Ogdensburg.
Algoma.....	280	" 20..	92·06	" ..	" Cape Vincent and Cornwall.
Crisco.....	65	" 20..	62·00	" ..	" ..
Dean.....	27	" 20 ..	11·19	" ..	" Kingston and Ft. Covington.
Outing.....	25	" 20..	15·87	" ..	" ..
Henry Plumb.....	240	" 20..	92·78	" ..	" Cornwall.
Massena	250	" 20..	89·67	" ..	" Cape Vincent and Cornwall.
Mary.....	300	" 20..	174·64	" ..	" Kingston and Ft. Covington.
Island Belle.....	330	" 23..	89·77	" ..	" River St. Lawrence.
Total.....			2,400·32		

STEAM Vessels not Inspected for the Year ended June 30, 1902.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks.
			Why not Inspected and Class of Vessel.
Dolce.	4·74	3·22	Screw, passenger : no application.
Mary Ethel.....	98·61	56·13	Paddle ..
Startled Fawn	25·49	17·34	Screw ..
Marmora	12·96	8·82	" ..
Mabel C.....	4·48	3·36	" yacht ..
Maud L.....	14·05	9·56	" tug ..
Frank.....	15·97	3·06	" ..
Total. .	176·30	101·49	

THOS. P. THOMPSON, *Steamboat Inspector.*

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1902.

EAST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Clinton		July 1 ..	430·00	39 40	Screw, lakes and rivers.
Alert	150	" 2 ..	56·38	9 48	" Co. Victoria.
Wanda	30	" 4 ..	38·61	8 12	" Trenton and Montreal.
Cygne	25	" 6 ..	12·06	5 96	" Kingston and Ottawa.
Rideau King	350	" 8 ..	265·92	*8 00	" " "
North Star	165	" 16 ..	39·60	8 20	" Rice Lake and tributaries.
City of Peterboro' ..	310	" 16 ..	224·29	26 40	T " " "
Rainbow	130	" 16 ..	50·69	9 08	" " "
Sunbeam	210	" 17 ..	104·92	16 40	" Cos. Victoria and Peterboro.
Empress	224	" 18 ..	84·48	11 72	" " "
Majestic	185	" 18 ..	67·77	10 44	" " "
Beaver	75	" 18 ..	18·00	6 44	" Rice Lake and tributaries.
		1901.			
Crandella	300	Dec. 31 ..	266·20	29 28	Paddle, Cos. Victoria and Peterboro.
		1902.			
Express	20	July 19 ..	3·90	5 32	Screw " "
Manita	150	" 19 ..	34·10	7 72	" " "
Greyhound	40	" 19 ..	37·35	7 96	" " "
Esturian	300	" 19 ..	139·39	19 12	Paddle " "
Comet	35	" 20 ..	7·60	5 64	Screw " "
Ogemah	150	" 22 ..	71·75	10 76	Paddle " "
Calumet	30	" 22 ..	21·97	6 76	Screw " "
Lady of the Lakes ..	38	" 22 ..	32·95	7 64	" " "
Pearl	20	" 22 ..	6·39	5 48	" " "
Maple Leaf	25	" 22 ..	26·08	7 08	" " "
Kawartha	25	" 23 ..	16·69	6 36	" Fenelon Falls and Kawartha L.
Dauntless	10	" 23 ..	3·38	5 24	" " "
Parthia	150	Aug. 1 ..	198·13	23 84	Paddle, Kingston and Prescott.
D. A. Martin	40	" 6 ..	77·60	11 24	Screw, Turtle Portage and North River.
R. Hurdman	40	" 7 ..	93·12	12 44	" " Kippewa.
Alice	40	" 7 ..	25·93	7 08	" " "
Comet	50	" 9 ..	144·42	16 52	" Lake Temiskaming.
Argo	40	" 9 ..	151·06	17 32	Paddle " "
Clyde	25	" 9 ..	29·16	7 33	Screw " "
Meteor	350	" 10 ..	299·43	31 92	" " "
Commodore	25	" 12 ..	3·06	5 24	" Carleton Place and Innisville.
Lillian B.	20	" 12 ..	3·76	5 32	" " "
Tropic	15	" 12 ..	8·86	5 72	" Kingston and Ottawa.
Dorcas	16	Not issued	2·51	5 24	" " Prescott.
Donnelly	200	Aug. 23 ..	318·91	33 52	Paddle, lake coasting and river.
Mary	10	Not issued	2·83	5 24	Screw, Kingston and Prescott.
Jopl.	40	Aug. 26 ..	10·54	5 88	" " "
Sarah A.	10	Not issued	1·91	5 16	" " "
Dorothy	20	Aug. 31 ..	10·09	5 80	" Trenton "
Grenada ..	175)	Sept. 10 ..	57·00	9 56	" Kingston and Montreal.
Princess Louise	125)				
Gracie	40	" 10 ..	26·36	7 08	" " "
Pontiac	40	" 10 ..	10·50	5 88	Paddle, Cornwall and Dundee.
Hudson	230	" 25 ..	115·52	14 28	" Chats Lake.
Prince Edward	40	" 27 ..	44·81	8 60	" Barry's Bay and Havergal.
	Ferry	Oct. 30 ..	18·22	6 44	" Tyendinaga and Sophiasville.
		1903.			
Pierrepoint	415	April 1 ..	251·98	26 16	" Trenton and Prescott.
Reliance	25	" 3 ..	239·14	27 12	Screw, Chicago and Montreal.
Ella Ross	300	" 3 ..	324·88	34 00	Paddle, Brighton and Prescott.
Ranger	15	" 3 ..	13·83	6 12	Screw, Trenton and Picton.

* Second Inspection.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—East Ontario Division—*Conclude*.HULL INSPECTION—*Concluded*.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Resolute.....	25	April 3..	371·86	37 76	T Screw, Chicago and Montreal.
Deseronto.....	85	" 3..	54·57	9 40	" Trenton and Pringer's Cove.
D. D. Calvin.....	Freight...	" 9..	749·53	65 00	" lakes and rivers.
India.....	"	" 10..	976·49	83 08	" "
Rosemount..	10	" 15..	1,580·37	134 40	" "
Glengarry.....	Freight...	" 15..	732·41	63 56	" "
Bothnia.....	"	" 21..	833·36	71 64	" "
Alexandria... (Lake River)	450 600	" 23..	863·15	77 04	Paddle, Charlotte and Quebec.
Rescue.....	25	" 12..	52·29	9 16	Screw, Trenton and Prescott.
Bannockburn.....	10	" 18..	1,619·56	137 60	" lakes and rivers.
Valeria.....	135	" 28..	51·55	9 16	" Kingston and Prescott.
Rideau King.....	350	May 1..	265·92	29 28	" " Ottawa.
Iona.....	15	April 26..	231·53	26 56	" lakes and rivers.
Armenia (Prescott Montreal)	600 400	May 7..	520·53	49 68	Paddle, Trenton and Montreal.
North King.....	525	" 4..	872·95	77 84	" lakes and rivers.
Lloyd S. Porter.....	Freight...	" 6..	488·63	44 12	Screw " "
Aletha (Prescott Valleyfield)	350 240	" 19..	171·27	21 68	" Trenton and Valleyfield.
Orion.....	Freight...	April 24..	846·43	72 68	" lakes and rivers.
Reindeer.....	165	May 20..	58·29	9 64	" Trenton and Prescott.
Argyle (Lake River)	535 800	" 20..	700·29	64 00	Paddle, Lake Ontario and St. L. Riv.
Varuna.....	240	" 20..	134·04	18 72	Screw, Trenton and Prescott.
Annie Lake.....	40	" 20..	18·52	6 52	" Brighton "
Crandella.....	350	" 21..	266·20	29 28	Paddle, Cos. Vic. and Peterboro.
Rideau Queen.....	300	" 28..	350·75	36 08	Screw, Kingston and Ottawa.
Cora.....	40	June 2..	22·61	6 84	" Cos. Vic. and Peterboro.
Martha.....	15	" 5..	2·42	5 16	" Kingston and Prescott.
Queen.....	40	" 10..	15·37	6 20	" L. Nipissing and tributaries.
Van Woodland.....	100	" 11..	37·49	7 96	" " "
Sparrow.....	40	" 11..	38·17	8 04	" " "
Ladas.....	18	" 11..	54·47	9 32	" " "
Booth.....	40	" 11..	346·55	35 76	Paddle " "
Empress.....	25	" 12..	35·57	7 88	Screw " Sturgeon Riv.
Fleur de Mai.....	10	" 12..	6·74	5 56	" Sturgeon Falls "
Verva.....	40	" 13..	54·54	9 40	" Wahnapatia L. and tributaries
Dauntless.....	10	" 14..	7·93	5 64	" Sturgeon Falls and River.
D. B. Mulligan.....	40	" 16..	76·69	11 16	" Pembroke and Allumette Isl.
Victoria.....	400	" 16..	187·58	23 04	Paddle " Des Joachims.
Mahigama.....	40	" 16..	19·91	6 60	Screw " Fort William.
Niagara (Lake River)	275 350	" 19..	412·23	40 96	" lake and river for excursions.
Armenia (Prescott D. Landing)	200 150	" 19..	109·99	18 80	" Trenton and Dickenson's Ldg.
Antelope.....	40	" 23..	24·98	7 00	" " Prescott.
Brockville (Prescott Cornwall)	358 240	" 23..	190·75	23 28	" Kingston and Cornwall.
Victoria.....	186	" 23..	58·10	9 64	" Trenton and Prescott.
Lee.....	35	" 24..	8·73	5 72	" Kingston "
City of Belleville.....	250	" 25..	101·17	16 08	" " "
International..... (C. & pass. ferry)	"	" 25..	395 31	39 60	Twin screw, Prescott and Ogdensburg
Jubilee.....	40	" 26..	53·94	9 32	Screw, Morrisburg and Waddington.
Carpian.....	500	" 28..	957·44	84 64	Paddle, Charlotte and Thousand Isl.

M. R. DAVIS,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels inspected in Canada but Registered elsewhere for the Year ended
June 30, 1902.

EAST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1902.		\$ cts.	
I Wonder.....	33	July 1..	16 11	Exempt.	Screw, Kingston and Ogdensburg.
Nettie.....	25	" 4..	11 02	"	" " " "
Niagara.....	40	" 9..	36 19	"	" L. C. and St. L. River.
Island Belle.....	335	" 9..	89 77	"	" Kingston and Ogdensburg.
Valetta.....	40	" 10..	27 84	"	" Trenton and Ogdensburg.
Idler..... (Lake..	30 }	Aug. 1..	57 29	"	" lake and river.
River.	150 }	" 26..	26 20	"	" Trenton and Ogdensburg.
Columbia.....	40	" 26..	26 20	"	" Trenton and Ogdensburg.
Algona. (Prescott....	280 }	June 20..	92 06	"	" C Vincent and Ft. Covington.
FtCovington	190 }	" 20..	92 06	"	" C Vincent and Ft. Covington.
Ariele.....	15	Sept. 10..	7 00	"	" " " "
Idler.. (Pres. & Que...	100 }	Not issued	57 29	"	" Trenton and Quebec.
Trenton & Pres	150 }	"	57 29	"	" Trenton and Quebec.
		1903.			
Islander.....	468	April 4..	118 61	"	Paddle, C. Vincent and Ogdensburg.
New Island Wanderer	400	" 9..	123 00	"	Screw, Kingston and Ogdensburg.
St. Lawrence.....	645	May 7..	312 90	"	Paddle, Kingston and Ogdensburg.
New York.....	730	June 7..	294 00	"	" Trenton and Ogdensburg.
Niagara.....	40	" 9..	36 19	"	Screw, " "
Thyra.....	40	" 18..	36 00	"	" Trenton and Montreal.
Ramona.....	150	" 21..	57 00	"	" Trenton and Ogdensburg.
Wm. Armstrong.	Ferry ...	" 24..	180 64	"	(Brockville and Morristown.
Outing.....	25	" 25..	15 87	"	(Prescott and Ogdensburg.
Henry Plumb. (Pres.	240 }	" 25..	92 78	"	" C. Vincent and Ft. Covington.
Corn..	175 }	" 25..	92 78	"	" Kingston and Cornwall.
Cresco.....	65	" 25..	62 00	"	" Cape Vincent and Cornwall.
Mary... (Prescott....	300 }	" 25..	174 00	"	" Kingston and Ft Covington.
Ft.Covingt'n	200 }	" 26..	89 67	"	" Cape Vincent and Cornwall.
Massena (Prescott....	250 }	" 26..	11 19	"	" Kingston and Ft. Covington.
Cornwall....	175 }	" 26..	92 06	"	" Cape Vincent and Cornwall.
Dean.....	27	" 26..	11 19	"	" Kingston and Ft. Covington.
Algona. (Prescott....	280 }	" 26..	92 06	"	" Cape Vincent and Cornwall.
Cornwall....	190 }	" 27..	46 67	"	" Kingston and Ogdensburg.
H. P. Bigelow..	100	" 27..	4 39	"	" " " "
Spry.....	25	" 27..	16 36	"	" " " "
Sophia.....	40	" 27..	16 11	"	" " " "
I. Wonder.....	32	" 27..	21 00	"	" " " "
Virginia.....	35	" 27..	11 35	"	" " " "
Gen. W. B. Franklin..	25	" 27..	29 23	"	" " " "
Capt, Visgar.....	110	" 27..	34 00	"	" " " "
Castanet..	125	" 28..	22 78	"	" " " "
Sirius.....	46	" 28..	19 00	"	" " " "
Capt. Dave Wagoner..	30	" 28..		"	" " " "

M. R. DAVIS,
Hull Inspector.

2-3 EDWARD VII., A. 1903

STATEMENT of Tow Barges inspected, and of Certificates of Inspection issued to
Tow Barges for the Year ended June 30, 1902.

EAST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tonnage.	Inspection Fees.	
		1902.		\$ cts.	
Otonabee.....	200	July 16..	49 00	10 00	
Hastings.....	150	" 16..	35 58	10 00	
Sultana.....	170	" 18..	40 00	10 00	
Comet.....	66	" 20..		10 00	
Lindsay.....	500	" 22..	75 00	10 00	
Lotus.....	25	" 24..	56 20	10 00	
Eclipse.....	200	" 25..	37 50	10 00	
		1903.			
Chaudiere.....	150	June 12..	71 70	10 00	
			364 98	80 00	

M. R. DAVIS,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1902.

MONTREAL DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Col By.....		July 1...	9	5 72	Screw, tug, Ottawa River.
Laurier.....		" 8...	19	6 52	" " St. Lawrence River.
Druid.....	300	" 10...	412	40 96	" passenger, Lake Ontario.
Préfontaine.....	40	" 22...	434	42 72	" " Montreal and Quebec.
Massawippi.....	10	" 24...	4	5 32	" " Lake Massawippi.
Lady of the Lake.....	700	" 24...	607	56 56	Paddle " Magog and Newport.
Annie C.....	10	" 25...	6	5 48	Screw " "
John A.....		" 25...	20	6 6	" tug " "
British Lion.....		" 26...	25	7 00	" " Rideau Canal.
Frolic.....	10	" 29...	16	6 28	" passenger, River Tal.
M. F. McRae.....		" 30...	46	8 68	" tug, St. Lawrence River.
Hama.....		" 31...	42	8 36	" pleasure yacht.
Spray.....		Aug. 1...	107	13 56	" tug, St. Lawrence River.
F. W. Avery.....		" 6...	14	6 12	Warp " Ostoboring Lake.
D. A. Martin.....	40	" 6...	78	11 24	Screw, passenger, North River.
R. H. Hurdman.....	40	" 6...	93	12 44	" " Kippewa Lake.
Alice.....	40	" 7...	26	7 08	" " " "
C. E. Read.....		" 7...	13	6 04	Warp tug " "
Otter.....		" 7...	21	6 68	" " " "
North River.....		" 7...	22	6 76	" " " "
Meteor.....	350	" 8...	299	31 92	Screw, pass., Temiscamingue Lake.
Comet.....	50	" 8...	144	16 52	" " " "
Little Roxy.....		" 8...	12	5 96	" tug " "
Argo.....	40	" 9...	154	17 32	Paddle, passenger " "
Clyde.....	25	" 9...	29	7 32	Screw " " "
Dora.....		" 10...	48	8 84	" tug " "
Beaver.....		" 10...	13	6 04	Warp " " "
Mink.....		" 10...	14	6 12	" " " "
Majestic.....	400	" 13...	275	30 00	Screw, passenger, Richelieu River.
Otto Dredge.....		" 24...	100	13 00	Dredge.
John.....		" 27...	35	7 80	Paddle, ferry, Carillon to Pointe Fortune.
*Montmorency.....		" 28...	18	12 88	Screw, tug, St. Lawrence River.
*Pontiac Dredge.....		" 28...	221	45 36	Spoon dredge.
White Squall.....		" 29...	7	5 56	Screw, pleasure yacht.
Chaffey.....		" 29...	42	8 36	" pass., Lancaster and Valleyfield.
Tiber.....	50	Sept. 2...	1,736	146 88	" " Coasting.
Duchess of York (Dred- ge).....		" 12...	100	13 00	Spoon dredge.
Adonis.....		" 14...	14	6 12	Screw, pleasure yacht.
Monarque.....		" 23...	136	15 88	Paddle, tug, St. Lawrence River.
Allie.....		" 24...	11	5 88	Screw, pleasure yacht.
Tit Willow.....		" 24...	17	6 36	" " " "
Pontiac.....	230	" 25...	116	14 28	Paddle, passenger, Chats Lake.
Dauntless.....	10	" 26...	8	5 64	Screw, " Lake Nipissing.
Union.....		" 27...	75	11 00	" tug, Upper Ottawa.
Hudson.....	40	" 27...	45	8 60	Paddle, pass., Barry's Bay to Havergal.
Chummy.....		" 28...	5	5 40	Screw, tug, Ottawa River.
Wild Rose.....		Nov. 4...	10	5 80	" pleasure yacht.
		1903.			
Longueuil.....	300	March 31.	365	37 20	Paddle, ferry, Montreal to Longueuil.
Hochelaga.....	300	" 31.	419	41 52	" " " Boucherville.
St. Laurent.....	257	April 4.	546	51 68	" pass., " Berthier.
Sir Hector.....		" 15.	40	8 20	Screw, tug, Ottawa River.
Florence.....		" 15.	62	9 96	" " " "
Dolphin.....		" 15.	70	10 60	" " " "
G. H. Harris.....		" 15.	87	11 96	" " " "
G. H. Notter.....		" 15.	14	6 12	" " " "

*Paid for 1900 and 1901.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—Montreal Division—*Continued.*BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Hebron.....		April 16.	149	16 92	Screw, freight, Lakes and Rivers.
Welshman.....	25	" 16.	156	20 48	" pass., Montreal to Ottawa.
Empress.....	800	" 16.	677	62 16	Paddle " Ottawa to Grenville.
Victoria.....	300	" 16.	181	22 48	Screw " " Thurso.
Rockland.....		" 17.	78	11 24	" tug " River.
Ada.....		" 17.	28	7 24	" " " "
Russell.....		" 17.	77	11 16	" tug, Ottawa river.
Mansfield.....	15	" 17.	169	21 52	" ferry, " to Gatineau Point.
Salaberry.....		" 19.	222	25 76	" pass., Valleyfield to Lancaster.
Victoria.....	400	" 21.	188	23 04	Paddle, pass. Pembroke to Des Joachims.
D. B. Mulligan.....	40	" 21.	77	11 16	Screw, ferry " to Desjardins.
E. H. Bronson.....		" 21.	285	27 80	Paddle, tug, Upper Ottawa.
Pembroke ..		" 21.	194	20 52	" " " "
Alex. Fraser ..		" 22.	320	30 60	" " " "
Hercules ..		" 22.	21	6 68	Warp, " " "
C. B. Powell.....		" 22.	272	26 76	Paddle, " " "
Hamilton.....		" 23.	320	30 60	" " Chats lake.
J. L. Murphy.....		" 23.	173	18 84	Screw, " " "
Sampson ..		" 23.	15	6 20	Warp, " " "
Amable du Fond.....		" 24.	17	6 36	" " " "
Madawaska.....		" 24.	15	6 20	" " " "
Charlemagne ..		" 25.	76	11 08	Screw, " St. Lawrence river.
H. F. Bronson.....		" 25.	137	15 96	" " " "
Jessie Hall.....		" 25.	57	9 56	" " " "
Harry Bate.....	40	" 28.	254	28 32	" pass., Montreal to Ottawa.
Olive.....	60	" 28.	151	20 08	" " " Portland.
T. Osborne.....		" 28.	25	7 00	" tug, Ottawa river.
Bonito.....	30	" 28.	17	6 36	" ferry, L'Original to Calumet.
Hall.....	50	" 29.	247	27 76	" pass., Montreal to Ottawa.
Chateauguay.....	440	May 1.	222	25 76	Paddle, " " Chateauguay.
Princess ..	443	" 1.	526	50 08	" " " Carillon.
*Lyon C.....		" 1.	19	13 04	Screw, tug, St. Lawrence river.
*Willie C.....		" 2.	8	11 28	" " " "
Laurier.....		" 2.	19	6 52	" " " "
Dredge No. 4.....		" 3.	100	13 00	Spoon dredge.
Little Giant (Dredge).....		" 3.	100	13 00	" " "
Pontiac.....		" 5.	221	22 68	" " "
Montmorency.....		" 5.	18	6 44	Screw, tug, St. Lawrence river.
Nama.....		" 5.	42	8 36	" Pleasure yacht.
Duchess of York.....	700	" 6.	490	47 20	Paddle, pass., Montreal to Carillon.
Leo.....	10	" 7.	2	5 16	Screw, ferry, Grenville to Hawkesbury.
Glide.....	40	" 7.	80	11 40	" " Calumet "
King Edward.....	600	" 12.	571	53 68	Paddle, pass., Toledo to Sault Ste Marie.
Archie Stewart.....		" 13.	80	11 40	Screw, tug, Montreal to Ottawa.
Filgate.....	200	" 13.	425	42 00	Paddle, pass., " Cornwall.
Sovereign.....	700	" 13.	637	58 96	" " " Carillon.
Richelieu.....	410	" 15.	113	17 04	" " " Valleyfield.
Queen.....		" 16.	332	34 56	Screw, " " "
G. B. Greene.....	600	" 19.	255	28 40	Paddle, " Deschenes lake.
G. B. Pattee.....		" 19.	30	7 40	Screw, tug, " "
Albert.....		" 19.	269	26 52	Paddle, " " "
Juno.....		" 20.	17	6 36	Screw, Pleasure yacht.
Chummy.....		" 20.	5	5 40	" tug, Ottawa river.
Emile.....		" 20.	12	5 96	" " " "
Alva.....		" 20.	27	7 16	" " " "
Mildred.....	25	" 21.	15	6 20	" pass., Buckingham to High Rock.
Leon.....	15	" 21.	15	6 20	" " High Rock to N.D. du L'eaus.
Agnes.....	40	" 22.	29	7 32	" " Buckingham to High Rock.
*Alexandria.....		" 23.	53	18 48	" Pleasure yacht.
Honoré.....		" 27.	22	6 76	" tug, St. Lawrence river.
St. Louis.....		" 29.	29	7 32	" Pleasure yacht.

* Paid for 1901 and 1902.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—Montreal Division—Continued.

BOILERS AND MACHINERY—Continued.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
*Florida.....		May 29..	201	42 16	Screw, frt., Montreal to Pierreville.
Nora.....		June 9..	28	7 24	" tug, St. Lawrence river.
Queen.....	40	" 10..	15	6 20	" pass., Lake Nipissing.
Carmita.....		" 10..	9	5 72	" Pleasure yacht.
Sparrow.....	40	" 10..	38	8 04	" pass., Lake Nipissing.
Van Woodland..	100	" 10..	37	7 96	" " " "
Booth.....	40	" 10..	347	35 76	Paddle, " " "
Ladas.....	18	" 11..	54	9 32	Screw, " " "
Zephyr.....		" 11..	3	5 24	" tug, " " "
Nosbonsing.....		" 11..	25	7 00	" " " Nosbonsing.
Monarch.....		" 12..	37	7 96	Warp, " " Nipissing.
Madoc.....		" 12..	8	5 64	" " " "
Turtle.....		" 12..	38	8 04	" " " "
Empress.....	25	" 12..	36	7 88	Screw, pass., " "
Shoofly.....		" 12..	10	5 80	" tug, " "
Verva.....	40	" 13..	55	9 40	" pass., " Wahnapiatae.
Sea Flower.....		" 14..	7	5 56	" tug, " Nipissing.
Dauntless.....	10	" 14..	8	5 64	" pass., " "
*Osprey.....	1	" 14..	6	10 96	" Fishing boat "
Fleur de Mai.....	10	" 14..	7	5 56	" pass., " "
Tit Willow.....		" 16..	17	6 36	" Pleasure yacht, Pembroke.
Mahigma.....	40	" 16..	20	6 60	" pass., Pembroke to Fort William.
Coulonge....		" 16..	18	6 44	Warp, tug, Braeside.
W. F. McRae.....		" 17..	46	8 68	Screw, " St. Lawrence river.
May.....		" 17..	21	6 68	" Pleasure yacht.
Ida.....		" 18..	247	27 76	" frt., Montreal to Ottawa.
Lady of the Lake....	700	" 19..	607	56 56	Paddle, pass., Lake Magog.
John A.....		" 19..	20	6 60	Screw, tug, " "
Massawippi.....	10	" 20..	4	5 32	" pass., " Massawippi.
Annie C.....	10	" 20..	6	5 48	" " " Magog.
Col. By.....		" 26..	9	5 72	" tug, Rideau canal.
E. G. Laverdure.....		" 26..	54	9 32	" " " "
Robert Anglin.....		" 26..	97	12 76	" " " "
Maude.....	350	" 27..	269	29 52	Paddle, pass., Montreal to Ottawa
Monitor.....		" 27..	62	9 96	Screw, tug, St. Lawrence river.
Total.....			19,148	2,456 92	

*Paid for 1901 and 1902.

WM. LAURIE.
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—Montreal Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Frank Jackman.		July 6..	38.90	8 12	Screw, tug, St. Lawrence river.
West Arm.....		June 18..	26.66	7 16	" Nipissing lake.
Derrick No. 2.....		Aug. 1..	100.00	13 00	Floating derrick, Montreal harbour.
Dredge No. 6..		" 3..	100.00	13 00	Dipper dredge, rivers.
Mary A. Laughlin		" 4..	22.62	6 84	Screw, tug, St. Lawrence river.
Dredge No. 4.....		" 10..	100.00	13 00	Dipper dredge, rivers.
Amy.....		" 11 ..	39.50	8 20	Screw, tug, St. Lawrence river.
Maggie R. King.....		Not issued	27.13	7 16	" Lachine canal.
Tim Doyle.....		Sept. 23..	14.84	6 20	" "
		1903.			
Derrick No. 5.....		Mar. 26..	100.00	13 00	Floating derrick, Montreal harbour.
" 4.....		" 26..	100.00	13 00	" "
" 1.....		" 26..	100.00	13 00	" "
" 6.....		" 27..	100.00	13 00	" "
Aberdeen		Not issued	86.58	11 96	Screw, passenger, Montreal harbour.
Derrick No. 3.....		Mar. 27..	100.00	13 00	Floating derrick "
Dredge No. 1.....		" 31..	100.00	13 00	Dipper dredge "
" 4.....		" 31..	461.11	41 88	" "
St. Peter ..		" 31..	43.00	8 44	Screw, tug "
Robert Mackay.....		Not issued	128.58	15 32	" passenger "
Dredge No. 2.....		April 3..	100.00	13 00	Dipper dredge "
Courier.....		Not issued	12.48	5 96	Screw, passenger "
Dredge No. 3.....		April 5..	100.00	13 00	Dipper dredge "
St. Louis.....		" 5..	34.00	7 72	Screw, tug "
Drill Boat.....		" 8..	100.00	13 00	Drill boat "
H. Larosée.....		" 24..	12.69	6 04	Screw, tug, Lachine canal.
Hector.....		May 1..	20.64	6 68	" St. Lawrence river.
Frank Jackman.		" 1..	38.90	8 12	" "
St. George.....		" 5..	67.85	10 44	" Richelieu river.
Antelope.....		" 14..	82.84	11 64	" Ottawa river.
Gertie		Not issued	20.95	6 68	" Lachine canal.
Plover... ..		May 20..	40.30	8 20	" "
Ida.....		" 20..	26.41	7 08	" Soulanges canal.
Dandy		" 26..	46.00	8 68	" Ottawa river.
C. W. Dennis.....		" 28..	16.91	6 36	" Lachine canal.
Grain Elevator St. Lawrence No. 1.....		June 6..	83.00	11.64	Screw, grain elevator, Montreal harb.
Grain Elevator No. 12.....		" 6..	183.00	19 64	" "
" 14.....		" 7..	181.00	19 48	" "
" 11.....		" 7..	169.00	18 52	" "
" 9.....		" 7..	172.00	18 76	" "
Nellie Reid.....		" 9..	55.71	9 48	Screw, tug, St. Lawrence river.
Grain Elevator No. 1.....		" 12..	165.00	18 20	" grain elevator, Montreal harb.
" 6.....		" 12..	170.00	18 60	" "
" 15.....		" 12..	212.60	22 04	" "
" 2.....		" 13..	170.00	18 60	" "
" 7.....		" 13..	170.00	18 60	" "
" 13.....		" 13..	178.00	19 24	" "
Robert Stoker		" 16..	13.72	6 12	" tug, Lachine canal.
Grain Elevator No. 4.....		" 16..	188.00	20 04	" grain elevator, Montreal harb.
" 16.....		" 17..	210.31	21 80	" "
" 10.....		" 17..	173.00	18 84	" "
Total... ..			5,003.23	650 48	

LOUIS ARPIN,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended
June 30, 1902.

MONTREAL DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
SS. Ella.....		July 30..	1,457	124 56	Screw, freight, Montreal and Sydney.
		1903.			
SS. Activ.....		June 10..	1,378	118 24	" "
Total ...			2,835	242 80	

WM. LAURIE.

STEAM Vessels not Inspected for the Year ended June 30, 1902.

Name of Vessel.	Gross Tonnage.	Regis- tered Tonnage.	REMARKS. Why not Inspected and Class of Vessel.
Agnes McMahon.....	81	47	Screw, tug.
H. M. Mixer.....	30	9	" "
Conqueror.....	233	24	Paddle, tug.
Marquis of Lorne	20	11	Screw, passenger.
Maid of the Mill.....	8	6	" tug.
Beatrice B.	59	43	" passenger.
Janet Craig.....	12	6	" ferry.
Vesta	14	8	" yacht.
Owl	4	3	" "
Elsie Ross.....	10	8	" "
Monaco.. ..	10	6	" "
Thistle	2	2	" "
Ishaway.....	7	5	" "
Ballantyne	14	6	Paddle, warp tug.
Quinze.....	32	26	Screw, tug.
John Thompson.....	5	4	" "
H. Trudel.	13	6	Paddle, warp tug.
West Arm.	27	24	Screw, tug.
River Belle	14	11	" "
Grain Elevator No. 8..	80	47	" grain elevator.
" No. 5.	80	47	" " "
Alcyone.....	38	22	" yacht.
Chipmonk.....	20	13	" "
Clipper.	4	3	" "
Frank Perew.....	43	24	" tug.
Tak it Easy.....	5	5	" yacht.
Aid.....	25	15	Paddle, tug.
Nokomis	25	17	Screw, yacht.
W. P. Buckley.....	27	10	" tug.
Dredge T. F. M. No. 1..	100	...	Spoon, dredge.
Total	1,042	458	

No application.

WM. LAURIE.
LOUIS ARPIN.

2-3 EDWARD VII., A. 1903

STEAM Vessels inspected for the Year ended June 30, 1902.

QUEBEC DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where Employed.
		1902.		\$ ct.	
Arizona		July 3..	9	5 72	Screw steam yacht, Lake St. John.
Grace		" 4..	4	5 32	" " " " Edward
Swallow		" 4..	9	5 72	" tug, Lake Edward
Kiskisink		" 5..	3	5 24	" pleasure yacht, Lake Kiskisink
Mistasini	40	" 1..	249	27 92	Paddle, pass., Lake St. John.
Marie Alma		" 1..	52	9 16	Twin screw tug, Lake St. John
Arthur		" 1..	15	6 20	Screw tug, Lake St. John.
*Marie Louise, (Gov.)					" " " "
Paribonka		July 1..	179	22 32	Paddle tug " "
Undine		" 1..	17	6 36	Screw " " "
Kinogami		" 15..	21	6 68	" " " Lake Chicoutimi
Marie Louise		" 20..	99	12 92	Pad. ferry Chicoutimi & Ste. Anne
Forest		" 21..	26	7 08	Screw tug " "
J. H. Hackett	25	" 2..	117	17 36	" " Montreal and Bic
M. E. Hackett		" 2..	78	11 24	" " " " Quebec
Johnnie H.		Aug. 2..	14	6 12	" " Riviere du Loup
Two Brothers		July 7..	23	6 84	" Quebec harbour tug
Queen	450	Aug. 1..	367	37 36	" Winter ferry, Quebec and Levis
Arthur		" 1..	78	11 24	Paddle tug Sorel and Three Rivers
J. Paul		" 1..	20	6 60	Screw tug, Sorel and Three Rivers
Fearless		" 2..	10	5 80	" " Pabos river
Admiral	250	" 2..	682	62 56	Pad., pass., Dalhousie and Gaspé
Christiana		" 20..	57	9 56	" tug, Restigouche river
Bella	40	" 20..	43	8 44	" ferry, Cross Pt. & Campbellton
Oak Bay		" 20..	27	7 16	" tug, Restigouche river
Le Brochu		" 20..	19	6 52	Screw tug, Lake Matepedia
Le Colon		" 28..	173	18 84	Paddle tug, Lake St. John
Polaris	450	Sept. 1..	553	50 61	Screw, winter ferry, Quebec and Lévis
Jack		" 1..	31	7 48	" tug, St. Thomas Basin
Macannamac		" 1..	4	5 32	" pleasure yacht, Spider lake
Jubilee	30	" 1..	25	7 00	" pass. Lake Megantic
Campania		" 1..	23	6 84	" tug, Lake Megantic
Fees		" 2..	10	5 80	" " " "
Honkidore		" 1..	10	5 80	" " Lake St. Francis
Dot		" 1..	10	5 80	" " " "
L'Ami		" 1..	16	6 28	" " Lake Aylmer
Alpha		" 1..	16	6 28	" " Quebec Harbour
Pilot	450	" 1..	426	42 08	" winter ferry, Quebec and Lévis
Amanda		" 1..	11	5 88	" Quebec harbour tug
St. Charles		" 1..	23	6 84	" " " "
Samson	30	Oct. 1..	94	12 52	" pass., Grandes Piles & LaTuque
Marguerite		Sept. 1..	34	7 72	" tug, Lake Maquina
Fabiola		" 1..	81	11 48	Wrecking sch'r., Gulf and Montreal
Maud		" 1..	50	9 00	Paddle tug, attending dredge
St. Pierre (dredge)		" 1..		5 00	Dredging Nicolet river
		1903.			
Heward McMaugh		June 1..	42	8 36	Screw tug, Quebec harbour
		1902.			
Dama		Sept. 1..	55	9 40	Screw tug, Escoumains river
Leilley H.		" 1..	19	6 52	" " Rivière du Loup
		1903.			
Savoy	25	May 1..	348	35 84	" pass. freight, Anticosti & Quebec
Polino	30	" 1..	807	72 56	" " " Mont. & St. John, N.B

*Owned by Public Works.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—Quebec Division—*Continued.*BOILERS AND MACHINERY —*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certi- cate Expires	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Rhoda.....	150	May 1..	182	22 56	Paddle pass,, Rimouski tender
*Heward, McMaugh		" 1..	42	8 36	Screw tug, Quebec harbour
Greetland	40	" 1..	1091	95 28	" pass.& frgt., Mont.& St.John,N B
Contest.....	25	" 1..	279	30 32	Paddle, attending buoys service
Red Island Light Ship					Govt. light ship
Lower transv'se L.Ship					" " "
Berthier.....	600	May 1..	934	82 72	Pad., pass., Montreal & Three Rivers
Chambly	600	" 1..	535	50 80	" " " Chambly
Sorel... ..	40	" 1..	158	20 64	" " " St.Thos.de Pierre Villa
Fire Fly.....	40	" 1..	214	25 12	" " Montreal and Berthier
Terrebonne.....	450	" 1..	636	58 88	" " " and Contrecoeur
Laprairie.....	350	" 1..	600	56 00	" " " and LaPrairie
Lac St. Pierre					Steamer attending dredge and surveys
St. Francis					" " "
Emelia.....					" " "
John Pratt					" " "
Frontenac					" " "
Prefontaine.....	40	June 1..	654	60 32	Screw, freight, Quebec and Montreal.
Lotbinière, now de Levis					Govt. steamer attending dredge.]
Champlain.....					" " "
Saguenay.....	443	May 15..	992	87 36	Pad., pass., Quebec and Chicoutimi.
Canada.....	600	" 1..	1,768	149 44	" " " Montreal.
St. Jean Iberville.....					Govt. steamer attending dredge
Cartier.....					" " "
Beaupré ex-Montréal..	800	May 1..	2,065	173 44	Pad., pass., Quebec and Montreal.
Carolina	650	" 1..	977	86 16	Pad., pass., Montreal and Chicoutimi.
Orleans		" 2..	269	29 52	Screw, ferry, Quebec & Orleans Island.
Champion	530	" 2..	182	46 56	Pad., pass., Quebec and Berthier.
Belle.....	25	" 15..	57	9 08	Screw, tug & 25 pass., Quebec & Bic.
Victoria.....		" 15..	48	8 84	" tug.
Hope.....		" 15..	19	6 52	" " "
Frontenac	400	" 1..	304	32 32	" pass , Quebec and St.Romuald.
Campana.....	400	" 5..	1,697	143 76	" Montreal and Pictou, N.S.
Challenger.....					Govt. Gross Isle service.
Ste. Croix	500	May 3..	506	48 48	Pad., pass., Montreal and Ste. Croix.
Quebec.....	550	" 5..	2,656	220 48	" " " Quebec.
South	800	" 1..	349	35 92	" ferry, Quebec and Levis.
North	450	" 1..	289	31 12	" " "
Etoile.....	450	" 1..	560	52 80	" Montreal.
Rodolphe.....	591	" 1..	116	14 28	Tug, paddle, Sorel and Three Rivers.
Dredge Laval.....					Govt. dredge.
Hudson		May 1..	158	17 64	Pad., tug, Quebec and Montreal.
W. C. Francis		" 1..	37	7 96	Screw, Montreal Harbour tug.
Hosanna.....		" 1..	89	12 12	Screw, ferry, str., Montreal&L'Orignal
Florence.....		" 1..	113	14 04	" tug on lake
Sincenne		" 1..	228	23 24	Pad., tug, Montreal and Quebec
Julia.....		" 1..	91	12 28	Twin screw, tug, Chambly River.
McNaughton		" 1..	137	15 96	Screw, tug, Montreal and lakes.
Ethel.....		" 1..	72	10 76	" " "
Fred, ex-Asilda.....		" 1..	23	6 84	" " "
St. Antoine.....		" 1..	14	6 12	" pleasure yacht, Chambly river.
Minnie F. Parsons.....		April 2..	45	8 60	" tug, St. Clair River.
Spartan	400	May 1..	946	83 68	Pad., pass., Montreal and Toronto.
Bohemian	400	June 1..	1,107	96 56	" " "
Algerian	400	" 1..	914	81 12	" " "
Ste. Anne		May 1..	14	6 12	Screw tug, Sorel and Louisville.
Virginia.....		" 1..	145	16 60	" Montreal and lakes.
Trois Rivières	1,200	" 1..	1,552	132 16	Pad. excursion, Montreal & Ste. Anne
May, ex-W. F. Loggie.....		" 1..	21	6 68	Screw, Montreal Harbour tug.
Trenton, No. 1 Dredge.....		" 1..	100	13 00	Dredging in Sorel Harbour.
Aurelia.....		" 1..	32	7 56	Screw tug attending dredge.
Conquerer		" 1..	233	23 64	Pad. tug, Montreal and gulf.
R. P. Flower.....		" 1..	15	6 00	Screw tug, Sorel Harbour

* Paid fees in 1901 and 1902.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—Montreal Division —Continued.

BOILERS AND MACHINERY —Continued.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1903.		\$ cts.	
Marie Josephine		May 1..	117	17 36	Screw wrecking st schooner, Montreal and Gulf.
Albatros		" 5..	20	6 60	" pleasure yacht, Montreal & Gulf
Majestic		" 13..	275	30 00	" pass., St. John's river.
Cultivateur		" 9..	362	36 96	Pad., ferry, Montreal & St. Helen Isl'd.
Nil		" 9..	28	7 24	Screw, pleasure, yacht, Sorel.
Richard		" 9..	466	45 28	" freight, Montreal & lower ports
Mary		" 10..	108	16 64	" pass., Quebec & lower ports.
Gaspesian		" 14..	490	47 20	" " Montreal "
Douro		" 26..	432	42 56	
Florence, St. Schooner.		" 16..	133	15 64	Screw pass., freights, Montreal & low- er ports.
Eureka, owned by Pub- lic Works Dept.		" 20..			Surveying channel.
Lord Strathcona		June 1..	495	47 60	Twin screw tug and 25 pass., Montreal and foreign ports.
King Edward.		" 1..	355	36 40	Screw pass., Montreal and lower ports.
Foam		" 10..	16	6 28	" Quebec harbour tug.
Two Brothers.		" 15..	23	6 84	" " "
Ivan R.		" 15..	18	6 44	" pass., Grandes Piles and La Tuque.
Florence		" 15..	18	6 44	" tug " "
Hirock		" 15..	8	5 64	" " " "
St. Maurice	25	" 15..	45	8 60	" pass. " "
St. Louis		" 15..	17	6 36	" tug " "
*Annet					" " " "
Marie Louise.		June 25..	6	5 48	" ferry, Mar'a Ville and Shawini- gan.
Como		" 25..	75	11 00	Pad., ferry, Nicolet and Three Rivers.
Bourgeois.		" 25..	94	12 52	" " " "
Glacial		" 25..	109	16 72	Screw, ferry, St. Angel and Three Riv.
Blandford		" 25..	65	10 20	Pad., tug, St. Maurice river.
Beatrice		" 25..	40	8 20	" " " "
M. E. Hackett.		" 25..	78	11 24	Screw, tug, Montreal and Quebec.
Caspian		" 25..	968	85 44	Pad., pass., Montreal and Toronto.
Columbia	500	" 15..	884	78 72	T.S., " " "
Corsican		" 15..	946	83 68	Pad., " " "
Charlevoix		May 1..	312	24 96	Screw, freight, Quebec and Montreal.
J. H. Hackett		June 20..	117	17 36	" tug and pas., Montreal and Gulf.
Honfleur		" 15..	19	6 52	" " Lake St. John.
Arthur		" 15..	15	6 20	" " " "
Undine		" 15..	17	6 36	" " " "
Mistasini.		" 15..	249	27 92	Pad., pass., Roberval and Grande Decharge.
Le Colon		" 15..	173	21 84	Pad., pass., Roberval and Mistasini.
Paribonka		" 15..	179	22 32	" tug, Lake St. John.
Marie Alma		" 15..	52	9 16	T.S., " " "
Kiskisin		" 15..	3	5 24	Screw, pleasure yacht, Lk. Keskisink.
Grace		" 20..	4	5 32	" " Lake Edward.
Swallow		" 20..	9	5 72	" tug, Lake Edward.
St. Louis	555	" 28..	343	35 44	Pad., pass., Montreal and Quebec.
Diver		" 20..	86	11 88	Screw, steam, wrecking schooner.
St. George		" 23..	12	5 96	" Quebec harbour tug.
St. Rock		" 23..	18	6 44	" " "
St. Charles		" 23..	23	6 84	" " "
Dolly					
Victoria	30	June 30..	343	35 44	Screw, steam barge, Montreal and Charbly.
Arthur		" 30..	78	11 24	Pad., tug, Sorel and Louisville.
E. B. Eddy		" 30..	78	11 24	Screw, tug, Quebec and Lakes.
Arizona		" 30..	9	5 72	" steam, pleasure yacht, Lake St. Joseph.

* Government tug on St. Maurice river.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—Quebec Division—*Concluded.*BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		8 cts.	
Ontario.....		June 30..	18	6 44	Screw, tug, Lake St. Joseph.
Frenton (No. 1 dredge)			100	13 00	
Aurelia.....			32	7 56	
Total			38,478	4,001 56	

STEAM Vessels not Inspected for the Year ended June 30, 1902.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Adriatic.	156	87	Laid up for want of trade, screw, pass.
Atlantic	564	283	" " "
City of London.....	517	294	" " "
Activity	22	15	Tug, attending dredge, inspected since.
Thor	323	203	Paddle, tug, inspected since.
Alma	12	8	Screw tug, not running.
Victor.....	35	18	" "
Mersey.	56	34	" "
Alaska	51	45	Screw, lighter, engine taken out of her.
Total.....	1,736	987	

JOS. SAMSON,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels inspected for the Year ended June 30, 1902.

QUEBEC AND MONTREAL DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Maud.....	350	July 20..	269	29 52	Pass. & frt., Montreal & Ottawa.
Harry Bate.....	40	" 20..	254	28 32	" " " "
Chaffey.....	40	" 20..	42	8 36	Screw, ferry, Valleyfield & Lancaster.
Paul Smith.....	300	" 25..	417	41 36	Pad., pass., Montreal & Ottawa.
Ida.....	40	" 25..	247	27 76	Pass. & frt., " "
Lady of the Lake.....	700	" 25..	607	56 56	Pad., pass., Newport & Georgeville.
Amy C.....	10	" 25..	6	5 48	Screw, yct., pass., " "
Missawippi.....	10	" 25..	4	5 32	" pass., on Lake Missawippi.
Douro.....	75	Aug. 1..	432	42 56	" " & frt., Quebec & Natasqua.
Belle.....	40	" 20..	51	9 08	" tender, Quebec Harbour.
Spray.....	15	" 22..	24	6 92	" " " "
Marie Louise.....	30	" 27..	99	12 92	Pad., pass., Chicoutimi & Ste. Anne.
Mistassini.....	40	" 28..	249	27 92	" " Roberval & Peribonca.
Peribonca.....			179	22 32	Not allowed to carry passengers.
Le Colon.....			173	18 84	" " " "
Undine.....			17	6 36	" " " "
Arthur.....	15	Aug. 29..	15	6 20	Screw, pass., waters of Lake St. John.
Admiral.....	250	" 31..	682	62 56	Pad., pass. & frt., Dalhousie & Gaspé.
Bella.....	40	" 31..	43	8 44	" ferry, Campbellton & Cross Pt.
John.....	30	July 25..	35	7 80	" " Carillon & Pt. Fortune.
Tiber.....	50	Sept. 13..	1,736	146 88	Screw, pass. & frt., Mont. & for. pts.
Majestic.....	400	" 14..	275	30 00	Pad., pass., Indian Tn., St. John, N.B.
Jubilee.....	30	" 18..	25	7 00	Screw, pass., waters of Lake Mégantic
Polaris.....	450	Oct. 2..	533	50 64	" winter ferry, Quebec & Lévis.
Pilot.....	450	" 3..	426	42 08	" " " "
Queen.....	450	" 4..	367	37 36	" " " "
		1903.			
Savoy.....	25	April 15..	348	35 84	" pass. & frt., Quebec & Anticosti.
Rhoda.....	150	" 15..	182	22 56	Pad., " mail tender, Rimouski.
Campana.....	400	" 20..	1,697	143 76	Screw, pass. & frt., Montreal & Pictou.
Polino.....	30	" 18..	807	72 56	" " " Montreal & Sydney
Greetland.....	40	May 4..	1,091	95 28	" " " " St. J.N.F.L.
Contest.....	75	April 7..	274	29 92	Pad., pass., attending buoys.
Orleans.....	530	" 4..	269	29 52	Screw, " Quebec & Isl. of Orleans.
Frontenac.....	555	" 4..	304	32 32	Pad., " " Berthier.
Champion.....	612	" 3..	482	46 56	" " " "
Berthier.....	600	" 9..	934	82 72	" " Montreal & Three Rivers.
Quebec.....	800	" 23..	2,656	220 48	" " Quebec & Montreal.
Canada.....	600	June 4..	1,768	149 44	" " Montreal & Chicoutimi.
Terrebonne.....	450	April 22..	636	58 88	" " " Contrecoeur.
Chambly.....	600	" 23..	535	50 80	" " " Chambly.
Sorel.....	40	" 23..	158	20 64	" ferry, Sorel & St. Thomas.
Fire Fly.....	40	" 22..	214	25 12	" " " Berthier.
North.....	450	May 3..	289	31 12	" " Quebec & Levis.
South.....	450	" 3..	349	35 92	" " " "
Carolina.....	600	April 23..	977	86 16	" pass., Montreal & Chicoutimi.
Ste. Croix.....	550	May 31..	506	48 48	" " " St. Anne.
Etoile.....	591	" 4..	560	52 80	" " " Montreal.
Spartan.....	400	June 27..	946	83 68	" " " Toronto.
Algerian.....	400	May 2..	914	81 12	" " " "
Saguenay.....	443	April 24..	992	87 36	" " " Saguenay.
Hochelaga.....	300	May 1..	419	41 52	" " " Hochelaga.
Longueuil.....	300	" 1..	365	37 20	" " " Longueuil.
Laprairie.....	350	April 22..	600	56 00	" " " Laprairie.
St. Laurent.....	257	" 26..	546	51 68	" " Montreal & Berthier.
Olive.....	60	June 12..	151	20 08	Screw, pass. & frt., Mont. & Ottawa.
Harry Bate.....	40	July 20..	254	28 32	" " " "
Welshman.....	25	June 11..	156	20 48	" " " "
Majestic.....	400	Sept. 14..	275	30 00	" " Indian Tn, St. John, N.B.

SESSIONAL PAPER No. 21

Steam Vessels Inspected, &c.—Quebec and Montreal Division—*Concluded.*HULL INSPECTION *Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where Employed.
		1903.		\$ cts.	
King Edward	600	May 9..	571	53 68	Screw, pas., Toledo & Sault Ste. Marie
Montreal.	800	June 4..	2,068	173 44	Pad., " Mont. & St. A. de Beaupré
Trois Rivières.	1,161	May 10..	1,552	132 16	Pad., pass., Montreal and St. Anne.
Richard		" 10..	466	45 28	Screw, ft., Montreal and lower ports.
Hosanna	185	" 10..	89	12 12	" ferry, Montreal and Longueul.
Columbian.	500	" 10..	884	78 72	" pass., Montreal and Toronto.
Terrebonne.	450	" 10..	636	58 88	Pad., pass., Montreal and Contrecoeur.
Préfontaine.	40	" 17..	654	60 32	Screw, pass., and ft., Montreal & Que.
G. B. Greene.	600	" 22..	255	28 40	Pad., pass., waters of Deschêne lake.
Victoria.	300	" 22..	181	22 48	Screw, pass., Ottawa and Thurso.
Manstfield	15	" 22..	169	21 52	" fry, N. Edinburg & Gatineau Pt.
Agnes	40	" 23..	29	7 32	" pass., Buckingham & High Rock.
Mildred	25	" 23..	15	6 20	" " "
Léon	15	" 23..	15	6 20	" High Rock and St. Ann.
John.	40	" 27..	34	7 72	Pad., ferry, Carillon and Pt. Fortune.
Glide	40	" 26..	80	11 40	Screw, ferry, Calumet & Hawkesbury.
Bonito.	30	" 26..	17	6 36	" Calumet & L'Orignal.
Leo.	25	" 26..	2	5 16	" Hawkesbr'y & Grenville.
Sovereign	700	" 27..	637	58 96	Pad., pass., Montreal and Carillon.
Hall.	50	" 29..	247	27 76	Screw, pass. & ft., Montreal & Ottawa.
Chateauguay.	440	" 29..	222	25 76	Pad., pass., Montreal & Chateauguay.
Hamilton	375	" 30..	938	83 04	" Montreal and Toronto.
Cultivateur.	751	" 30..	362	36 96	Pad., ferry Mont'l and Isd St. Helen.
Harbour C. S. Courier.	+		12	5 96	
" St. Peter.	+		43	8 44	
" St. Louis.	+		34	7 72	
" Aberdeen	200	+	87	11 96	
" Robt. McKay.	200	+	129	15 32	
Bohemian	375	May 31..	1,107	96 56	Pad., pass., Montreal and Prescott.
Empress.	800	" 22..	677	62 16	" Ottawa and Grenville.
Corsican.	400	June 12..	946	83 68	" Montreal and Prescott.
R. C. Flower.	20	" 13..	15	6 20	Screw, pass., Sorel and Berthier.
Gaspésian	40	" 19..	490	47 20	" & ft., Mont'l & B. des Chal'r.
St. Louis.	514	" 20..	428	42 24	Pad., pass., Quebec and Montreal.
Douro.	60	" 27..	432	42 56	Screw, pass. & ft. Que. and Netasquan.
Victoria.	6	" 28..	343	35 44	" Montreal and Valleyfield.
Queen.	225	" 28..	332	34 56	Screw, freight, Montreal and Carillon.
Valleyfield.	450	" 30..	417	41 36	" Montreal and Toronto.
Richelieu.	100	" 30..	113	17 04	Pad., pass., Montreal and Valleyfield.
Filgate.	273	" 30..	424	41 92	" Montreal and Cornwall.
Bella Ritchie.	125	" 30..	69	10 52	" Montreal & Beauharnois.
Mary	18	" 20..	108	16 64	Screw, pass. & ft., Quebec and Gaspé.
Princess.	443	" 30..	527	50 16	Pad., pass., Montreal and Carillon,
Duchess of York.	700	" 30..	490	47 20	" Montreal.
Bonenfant.	25	July 1..	31	7 48	Pad., ferry, Bout l'Isle & Charlemag'e.
St. Maurice	40	" 2..	45	8 60	Screw, pass., Grand Péle & La Tuque.
Ivan R.	40	" 2..	18	6 44	" " "
Samson		" 2..	93	12 44	" " "
Bourgeois	40	" 3..	94	12 52	Pad., ferry, T. Rivers & St. Gregoire.
Como	40	" 3..	75	11 00	" Three Rivers and Nicolet.
Glacial.	40	" 3..	109	16 72	Screw, ferry, T. Rivers & St. Angele.

- Freight. + Not fit to carry passengers. ‡ Not equipped.

PIERRE D. BRUNELLE,
Hull Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the Year ended December 30, 1902.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Lion		July 1..	19.82	6 60	Screw, tug, coasting.
Dolphin		" 1..	12.78	6 04	" " "
Star.....	15	" 2..	6.07	5 48	" passenger, river.
L. Boyer	100	" 10..	60.00	9 80	" " Halifax Harbour.
Weymouth	100	" 23..	153.93	20 24	" " coasting.
Rescue		" 24..	124.09	14 92	" tug, coasting.
Fairy		" 24..	16.06	6 28	" water boat, Sydney Harbour.
Elinor M. Cates.....		" 26..	58.81	9 72	" tug, coasting.
Zulieka.....	18	" 26..	12.38	5 96	" passenger, Mira River.
Marietta	20	" 26..	7.04	5 56	" " "
Cesta.....		" 26..	9.21	5 72	" tug, Mira River.
Iona	22	" 27..	54.27	9 32	" pass., coasting.
Eldon.....	40	" 29..	37.91	8 04	" " Strait of Canso.
Malcolm Cann	125	" 30..	211.81	24 96	" " coasting.
Carrie.....	40	Aug. 8..	14.83	6 20	" " Chester and Mahone.
Maggie.....	38	" 8..	19.26	6 52	" " Lunenburg and South.
Trusty	150	" 8..	57.60	9 64	" " La Have River.
St. Michael.....	15	" 9..	39.20	8 12	" " coasting.
Gambrinus		" 12..	28.36	7 24	" tug, Halifax Harbour.
Bessie and Harry		" 16..	22.00	6 76	" water boat, Halifax Harbour.
A. C. Whitney.....	75	" 19..	62.67	10 04	" passenger "
Commodore	30	" 19..	12.84	6 04	" " "
Anticosti.....		" 19..	19.00	6 52	" tug, coasting.
Flash	15	" 20..	7.79	5 64	" pass., Halifax Harbour.
Collector	40	" 21..	52.02	9 16	" " "
Henry Hoover.....		" 30..	54.64	9 40	" tug "
Salvor.....		Sept. 7..	44.93	8 60	" lighter "
Harbinger		" 13..	108.56	13 72	" fishing boat, coasting.
Mascotte	17	" 17..	35.40	7 80	" passenger, Halifax Harbour.
Aid		" 18..	98.55	12 84	" tug, coasting.
Lunenburg	200	Oct. 1..	265.55	29 28	" pass. "
Ralph E. S.....		" 8..	27.82	7 24	" fishing boat, coasting.
Annie		" 21..	42.12	8 56	" water boat, Halifax Harbour.
Bridgewater	225	" 28..	207.79	24 64	" pass., coasting.
Wilfred C	60	" 24..	99.26	12 92	" " "
LaHave.....		Nov. 1..	49.27	8 92	" tug "
Goliab	17	" 1..	146.83	19 76	" pass. "
Pekin	17	" 9..	84.91	11 80	" " "
Westport	125	" 14..	80.09	11 40	" " Yarmouth and St. John.
Edna R		" 14..	49.66	8 92	" fishing boat, coasting
Yankee		" 14..	7.31	5 56	" " "
Ida Sue.....		" 14..	44.51	8 60	" tug "
Wanda		" 15..	38.48	8 04	" " "
Nereid.....		" 15..	12.21	5 96	" " "
Halifax	250	" 10..	338.42	35 04	Paddle, ferry, Halifax Harbour.
Alpha		Dec. 5..	61.20	9 88	Screw, fishing boat, coasting.
Messenger	100	" 13..	111.53	13 96	" " and pass., coasting.
Oncita		Aug. 8..	14.96	6 20	" " boat "
Newfoundland.....		Feb. 14..	918.75	78 52	" freight "
Harlaw	60	" 25..	451.36	44 08	" passenger "
J. L. Nelson.....	20	Mar. 11..	37.84	8 04	" " "
City of Ghent	60	" 21..	198.64	23 92	" " "
Chester		" 24..	79.50	11 40	" tug "
Florence C		" 26..	38.98	8 12	" fishing boat "
Lenore		" 26..	15.23	6 20	" " "
T. B. Hamblin.....	100	April 4..	31.71	7 56	" fishing and pass. "
Mable K		" 3..	15.20	6 20	" " boat "
Anita		" 5..	26.50	7 16	" " "
Yarmouth	450	" 8..	1,451.92	124 16	" passenger, foreign.
Percy Cann	35	" 10..	80.06	11 40	" " coasting.
Gertrude M.....	35	" 10..	47.58	8 84	" " "
LaTour	60	" 10..	154.43	20 32	" " "

SESSIONAL PAPER No. 21

STEAM VESSELS Inspected, &c.—Nova Scotia Division—*Concluded.*BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Cacouna		April 30..	1,450 78	121 08	Screw, freight, coasting.
Coban	37	" 12..	1,063 30	93 04	" passenger "
Louisburg		" 16..	1,815 60	150 28	" freight, foreign.
Bonavesta	50	" 17..	1,306 33	112 48	" passenger, foreign.
Halifax	500	" 29..	1,874 88	158 00	" " "
Acadia	37	" 21..	74 21	10 92	" " coasting.
Flash	15	" 22..	7 79	5 64	" " Halifax harbour.
Helen May Butler		" 23..	66 98	10 36	" fishing boat, coasting.
Cape Breton		" 29..	1,764 19	146 12	" freight, foreign.
Mikado		" 28..	43 94	8 52	" lighter, Halifax harbour.
Douglas H. Thomas	18	" 1..	211 91	24 96	" passenger, coasting.
Trusty	75	May 1..	57 60	9 64	" " La Have river.
A. C. Whitney	75	" 13..	62 67	10 04	" tug & pass., Halifax harbour.
Evangeline	100	" 14..			Register in London, G.B., undergoing change of ownership.
Avon	100	" 14..	64 66	10 12	Screw, passenger, Avon river.
Falmouth		" 14..	43 03	8 44	" tug, "
Arcadia	37	" 16..	61 64	9 96	" passenger, coasting.
Marion	10	" 16..	10 30	5 80	" " Pictou harbour.
W. M. Weatherspoon		" 16..	59 29	9 72	" tug, coasting.
Gipsy		" 16..	16 70	6 36	" " "
May Queen	25	" 16..	35 92	7 88	" passenger, Pictou harbour.
John L. Cann	125	" 17..	165 55	21 28	" " coasting.
Vega	90	" 17..	132 22	18 56	" " Mulgrave and Sydney
Meadow Flower		" 19..	6 56	5 56	" water boat, Canso harbour.
Active		" 19..	59 91	9 80	" tug and fishing, coasting.
Vulcan		" 19..	18 40	6 44	" " "
*Fred L. M. Paint	37	" 20..	88 18	15 04	" passenger, Strait of Canso.
Blue Hill	140	" 20..	195 83	23 68	" " Bras d'Or Lakes.
Gladiator		" 21..	70 40	10 60	" tug, coasting.
Pawnee	450	" 21..	106 80	16 56	" passenger, coasting.
Fairy		" 21..	16 06	6 28	" water boat, Sydney harbour.
Nelson	100	" 21..	64 34	10 12	" passenger, "
Merrimac	20	" 22..	85 80	11 80	" " Strait of Canso.
Diamond		" 22..	22 65	6 84	" tug, Sydney harbour.
Daisy		" 22..	10 74	5 88	" water boat, "
Hygeia	190	" 22..	57 69	9 64	" passenger, "
C. M. Winch		" 22..	87 72	12 04	" tug, coasting.
Peerless	300	" 22..	94 27	12 52	" passenger, Sydney harbour.
Zaidee		" 23..	18 63	6 44	" water boat, "
Sea Bird		" 23..	41 28	8 28	" fishing boat, coasting.
Weymouth	100	" 23..	153 93	20 24	" passenger, "
Dartmouth	435	April 29..	311 23	32 88	Paddle, passenger, Halifax harbour
Petrel	18	June 2..	6 36	5 48	Screw " " "
Markland	75	" 5..	21 92	6 76	" " Yarmouth harbour
Tourist	38	" 5..	4 42	5 32	" " " "
Juno	40	" 5..	9 29	5 72	" " " "
Island Gem		" 5..	15 62	6 28	" fishing boat, coasting.
Boston	550	" 23..	1,694 50	143 52	" passenger, foreign.
Marina	75	" 6..	32 46	7 56	" " Annapolis Basin.
Freddie V		" 6..	26 69	7 08	" tug " "
Centreville		" 6..	59 71	9 80	" tug, coasting.
Glencoe	40	" 7..	32 21	7 56	" passenger, Annapolis river.
Ulala		" 16..	13 70	6 12	" yacht, Halifax harbour.
Pastime	150	" 17..	67 71	10 44	" passenger " "
Alexandra		" 28..	33 67	7 72	" yacht, " "
Shannon		" 26..	75 11	11 00	" tug, coasting.
Totals			20,674 66	2,305 48	

* An over charge of \$3.00 was made by Collector of Customs.

J. P. ESDAILE, *Steamboat Inspector, Halifax, N.S.*

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected in Canada but registered elsewhere, for the Year ended
June 30, 1902.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certifi- cate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1902.		\$ cts.	
Ocamo.	75	July 15..	1,826·54	154 16	Screw, passenger, foreign.
F. W. Roebling.	30	" 18..	161·97	20 96	" " coasting.
Bruce	300	" 23..	1,154·59	100 40	" " foreign.
Pro Patria.	60	Aug 1..	759·01	68 72	" " "
Chebucto.	400	" 14..	578·48	54 24	" ferry, Halifax harbour.
Oruro	150	" 21..	1,919·07	161 52	" passenger, foreign.
Beta.	75	Sept. 11..	1,086·67	94 96	" " "
Prince Edward.	600	" 13..	1,413·74	121 12	Twin screw, " "
Erna.	100	July 31..	1,530·11	130 40	Screw, " "
		1903.			" " "
Glencoe	100	Jan. 8..	767·09	69 36	
Amelia.	230	April 4..	356·54	36 56	" " coasting.
Silvia	109	" 22..	1,707·70	144 64	" " foreign.
F. W. Roebling.	35	" 19..	161·97	20 96	" " coasting.
Prince George	600	May 9..	2,040·14	171 20	Twin screw, " foreign.
Elaine.	300	" 23..	272·08	29 76	Screw, " coasting.
Bruce ..	300	" 23..	1,154·59	100 40	" " foreign.
Prince Arthur	600	June 10..	2,041·44	171 28	Twin screw, " "
Rosalind.	160	" 27..	2,567·70	213 44	Screw, " "
Olivette	450	" 16..	1,678·19	142 24	" " "
Orinoco.	140	" 30..	2,486·49	206 88	" " "
		1902.			
Alert	37	Nov. 20..	105·39	13 40	" " coasting.
Totals			25,769·50	2,226 60	

JOHN P. ESDAILE,
Steamboat Inspector, Halifax, N. S.

SESSIONAL PAPER No. 21

STEAM Vessels not Inspected for the Year ended June 30, 1902.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS.
			Why not Inspected and Class of Vessel.
Tusket.....	3.04	2.00	Laid up, tug.
Alida.....	64.18	29.52	" "
Gem.....	4.69	2.12	" fishing boat.
Havana.....	470.18	245.86	" passenger and freight.
Maple Leaf.....	129.06	81.31	" ferry boat.
Volunda.....	29.80	13.96	" yacht.
Jessie Gray.....	76.01	47.93	" lighter.
Bessie.....	10.45	5.74	" passenger.
Victor.....	9.62	6.41	" tug.
David Duncan.....	20.59	10.59	" "
Mable K.....	15.20	10.34	Not yet inspected.
Elsie.....	22.14	15.06	" "
Lennox.....	66.29	41.76	Laid up, ferry boat.
Lady Glover.....	137.51	93.51	" passenger and freight.
Susie.....	26.83	15.74	Not yet inspected, passenger.
Marion.....	478.49	269.27	" " "
Arbutus.....	46.76	31.80	" " tug.
Yuba.....	12.04	6.01	" " passenger.
Robbie Burns.....	88.95	73.18	" " lighter.
Highland Mary.....	73.73	50.14	" " "
Albatross.....	31.38	18.25	Laid up, yacht.
Dolphin.....	8.07	3.66	" fishing boat, repairing boiler.
Total...	1,825 01	1,074 16	

JOHN P. ESDAILE,
Steamboat Inspector, Halifax, N. S.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the Year ended June 30, 1902.

NOVA SCOTIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1902.		\$ cts.	
Star	15	July 1..	6.07	5 48	Screw, ferry, Wallace river.
J. B. Hamblin	100	" 4..	31.71	7 56	" excursion, Halifax harbor.
L. Boyer	100	" 10..	60.00	9 80	" pass. and tug "
Weymouth	100	" 24..	153.93	20 24	" pass. and freight, coasting.
Marion	400	" 25..	478.49	46 24	" " inland navig.
Zulieka	18	" 26..	12.04	5 96	" " " "
Marietta	20	" 26..	7.04	5 56	" " " "
Iona	22	" 27..	54.72	9 32	" " & tug, Sydney & lakes.
Eldon	38	" 29..	37.91	8 04	" " Strait of Canso.
Malcolm Cann.	125	" 29..	211.81	24 96	" " Mulgrave & coastwise.
Trusty	150	Aug. 8..	57.60	9 64	" " & tug, Bridgewater & sn. pts.
Carrie	40	" 8..	14.83	6 20	" " Chester & Mahone bay
Maggie	37	" 8..	19.26	6 52	" " & tug, Lunenburg & South.
St. Michael	15	" 10..	39.20	8 12	" " " Liverp'l & shore p.
Commodore	30	" 14..	12.84	6 04	" " Halifax harbour.
Flash	15	" 20..	7.79	5 64	" " " "
Collector	40	" 21..	52.02	9 16	" " " "
A. C. Whitney	75	" 21..	62.67	10 04	" " " "
Mascotte	20	Sept. 17..	35.40	7 80	" " " "
Lunenburg	200	Oct. 2..	265.55	29 28	" " & freight, Halifax & coast
Bridgewater	225	" 29..	207.79	24 64	" " Halifax & coast.
Wilfred C.	60	" 24..	99.26	12 92	" " " "
Goliah	17	Nov. 1..	146.83	19 76	" " & tug "
Pekin	17	" 9..	84.91	11 80	" " & fr'ght "
Westport	125	Sept. 14..	80.09	11 40	" " Yarmouth & coast.
Halifax	240	Nov. 10..	338.42	35 04	Paddle, ferry, Halifax & Dartmouth.
		1903.			
Newfoundland		Feb. 15..	918.75	78 52	Screw, freight, Halifax & coast.
J. L. Nelson	20	Mar. 12..	37.84	8 04	" pass. & freight "
City of Ghent	60	" 24..	198.64	23 92	" " Canada & foreign.
Douglas H. Thomas	18	April 1..	211.91	24 96	" " Halifax & coast.
Percy Cann.	35	" 9..	80.06	11 40	" " Yarmouth & coast.
Yarmouth	450	" 9..	1451.92	124 16	" " " "
La Tour	60	" 9..	154.93	20 32	" passenger " "
Cacouna		" 16..	1450.78	121 08	" freight, Canada & foreign.
Louisburg		" 16..	1850.60	150 28	" " " "
Acadia	37	" 21..	74.21	10 92	" ferry, Sydney & North Sydney.
Cape Breton		" 21..	1764.19	146 12	" freight, Canada & foreign.
Flash	15	" 24..	7.79	5 64	" passenger, Halifax harbour
Bonavesta	50	" 26..	1306.33	112 48	" pass. & fr'ght, Canada & foreign
Halifax	500	" 29..	1874.88	158 00	" " " Halifax & coast.
Coban	37	" 30..	1063.30	93 04	" " " Canada & foreign.
Gertrude M.	35	" 3..	47.58	8 84	" " " Yarmouth & coast
Evangeline	100	May 14..	69.18	10 52	" " " Canada & foreign
Avon	100	" 14..	64.66	10 12	" excursion & tug, Bay of Fundy
Marion	10	" 17..	10.30	5 80	" pass. & tug, Pictou harb. & riv.
May Queen	25	" 17..	35.92	7 88	" " " "
Arcadia	37	" 19..	61.64	9 96	" " & freight, Pictou & coast.
John L. Cann.	125	" 20..	165.55	21 28	" " " Mulgrave & coast.
Fred. L. M. Paint	36	" 20..	88.18	12 04	" " " "
Vega	90	" 20..	132.72	18 56	" " " Strait of Canso & Bras d'Or lake.
Blue Hill	140	" 20..	195.83	23 68	Twin screw, pass. & freight, Baddeck & Grand lake.
Nelson	100	" 21..	64.34	10 12	" " " "
Merrimac	20	" 22..	85.80	11 80	Screw, pass. & tug, Strait of Canso.
Weymouth	100	" 23..	153.93	20 24	" " & freight, Sydney & coast
Pawnee	450	" 21..	106.80	16 56	" " " Canada & foreign.
Hygeia	190	" 22..	57.69	9 64	" ferry, Sydney & North Sydney.

SESSIONAL PAPER No. 21

STEAM Vessel Inspected, &c.—Nova Scotia Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1903.		\$ cts.	
Peerless	300	May 23..	94 27	39 76	Screw, fy., Sydney & North Sydney.
Harlaw	60	April 22..	451 36	44 08	" pass. & fr'ght, Halifax & coast.
Petrel	20	June 3..	6 36	5 48	" ferry, Richmond & Dartmouth.
Markland	87	" 5..	21 92	6 76	" " Yarmouth harbour.
Tourist	38	" 5..	4 42	5 32	" " "
Marina	75	" 6..	32 46	7 56	" pass. & tug, Annapolis Basin.
Glencoe	40	" 6..	32 21	7 56	" ferry, Annapolis river.
Juno	40	" 7..	9 29	5 72	" passenger, Yarmouth harbour.
Trusty.. . . .	75	May 3..	57 60	9 64	" pass. & tug, Bridgewater & shore ports.
Dartmouth .. .	435	April 19..	311 23	32 88	Paddle, ferry, Halifax & Dartmouth.
A. C. Whitney.....	75	June 20..	62 67	10 04	Screw, passenger, Halifax harbour.
Boston	550	" 23..	1694 50	143 52	" pass. & fr't, Yarmouth & foreign
Pastime.....	150	" 30	67 71	10 44	" excursion, Halifax harbour.

STEAM Vessels Inspected in Canada but registered elsewhere for the Year ended 30 June 30, 1902.

		1902.		\$ cts.	
Ocarno	75	June 12...	1,826 54	154 16	Screw, pass. & ft., Canada & foreign.
Erna	100	" 17...	1,530 11	130 40	" " " "
Bruce.....	300	" 23...	1,154 59	100 40	" " " "
Pro Patria	60	July 1...	759 01	68 72	" " " "
Chebucto.....	400	" 14...	578 48	54 24	" ferry, Halifax harbour.
F. W. Roebling. . . .	30	June 18...	161 97	20 96	" pass. and tug, coasting.
Oruro.....	150	July 21...	1,919 07	161 52	" pass. & ft., Canada & foreign.
Beta	75	Aug. 11...	1,086 67	94 96	" " " "
Prince Edward. . . .	600	" 13...	1,413 74	121 12	" " " "
		1903.			
Glencoe.....	100	Jan. 9...	767 09	69 36	" " " "
		1902.			
Alert	17	Dec. 20..	105 39	13 40	" ferry, Strait of Canso.
		1903.			
Amelia	230	April 5 ..	356 64	36 56	" pass. & ft., Halifax & Coast.
Silvia	109	" 22...	1,707 70	144 64	" " " Canada & foreign.
F. W. Roebling.....	35	" 30...	161 97	20 96	" " and tug coasting.
Prince George.....	600	May 8...	2,040 14	171 20	" " freight, Canada & foreign
Bruce	300	" 23...	1,154 59	100 40	" " " "
					" " " Sydney and Bras
Elaine	300	" 23...	272 08	29 76	d'Or lakes.
Prince Arthur	600	June 18...	2,041 44	171 28	Screw, pass., ft., Canada & foreign.
Olivette	450	" 19...	1,678 19	142 24	" " " "
Rosalind	160	" 28...	2,567 70	213 44	" " " "
Orinoco	140	" 30...	2,486 49	206 88	" " " "

S. R. HILL,
Inspector of Hull and Equipment, Halifax, N.S.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the year ended June 30, 1902.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection. Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Waring.....		July 4..	28·74	7 32	Screw, tug, St. John.
Alice.....		" 17..	15·77	6 28	" " Buctouche.
Calluna.....		" 18..	22·26	6 76	" " Richibucto.
Dirigo.....	40	" 20..	70·13	10 60	" freight and pass., St. John.
Lora Roberts.....		" 26..	55·98	9 48	" tug, "
Amanda Green.....		" 30..	19·63	6 60	" " "
Neptune.....	40	Aug. 1..	71·15	10 68	" " and pass., "
Bessie Ardella.....		" 5..	17·42	6 36	" freight and fish, St. Andrews.
Dream.....		" 13..	44·51	8 60	" yacht, St. John.
William Aitken.....	25	" 15..	74·87	11 00	" tug, Charlottetown.
Nelson.....		" 15..	32·80	7 64	" " "
Addino Paddock.....		not issued.	102·94	16 24	Paddle, Ferry, Rothesay.
Elliot.....		Sept. 3..	367·50	34 36	Screw, freight, foreign.
Beryl Essie.....		" 17..	23·83	6 92	" tug, Tignish.
Aurora.....	200	Oct. 2..	364·24	37 12	" pass., St. John, Grand Manan.
Aberdeen.....	300	" 8..	243·86	27 52	Stern wheel, pass., St. John River.
Vacuna.....		" 14..	9·52	5 80	Screw, tug and freight, Vanceboro.
Western Extension....	280	Sept. 28..	424·89	42 00	Paddle, ferry, St. John.
Kingsville.....		Nov. 4..	36·59	7 96	Screw, tug, "
Springhill. (B.of Minas	100)	Dec. 4..	189·05	23 12	" " " and coasting.
Onangandy. (B.of Fundy	60)	" 24..	294·75	31 60	Paddle, ferry, "
	208				
		1903.			
Leader.....		Feb. 19..	29·32	7 32	Screw, tug, "
Hercules.....		Mar. 7..	87·11	11 96	" " "
W. H. Murray.....		" 7..	72·55	10 84	" " "
E. Ross.....	40	" 15..	29·63	7 40	" ferry, "
Admiral.....		" 18..	158·20	17 64	Paddle, tug, " river.
Lilly Glasier.....		" 18..	209·31	21 72	" " " "
Hero.....		" 18..	127·63	15 24	" " " "
Fred Glasier.....		" 18..	10·39	5 80	Screw, " " "
Springfield.....	254	" 18..	232·73	26 64	Stern wheel, pass., " "
G. K. King.....		" 19..	45·48	8 60	Screw, tug, " "
Nereid.....		" 20..	30·03	7 40	" " " "
Champion.....		" 21..	190·14	20 20	Paddle, " " "
Hampstead.....	150	" 21..	234·52	26 80	Screw, pass., " "
Sea King.....		" 21..	128·63	15 32	" tug, " "
Winnie.....		" 21..	12·46	5 96	" " " "
Maggie M.....		" 21..	65·78	10 28	" " " "
Northumberland.....	350	" 27..	1,255·46	108 40	Twin screw, pass., N.B. and P.E.I.
Princess.....	350	" 27..	541·79	51 36	Screw, " N.S. and P.E.I.
Jacques Cartier.....	300	" 27..	379·96	38 40	Paddle, " P. E. Island.
Star.....	300	" 29..	461·03	44 88	" " St. John.
Clifton.....	200	" 29..	138·21	19 04	Stern wheel, " "
David Western.....	450	" 31..	765·15	69 20	Paddle, " "
Quiddy.....		" 31..	30·59	7 48	" tug, " "
Maggie Miller.....	150	" 31..	104·66	16 40	" ferry, Kennebecasis river.
Bismark.....	40	April 4..	49·04	8 92	" pass., St. John river
Hope.....		" 4..	305·77	29 48	" tug, " "
May Queen.....	370	" 7..	539·40	51 12	" pass., " "
Wee Laddie.....		" 10..	16·60	6 36	Screw, tug, " "
Captain.....		" 14..	68·43	10 44	" " " "
Serena E.....	40	" 15..	24·94	7 00	" " Apple river, N.S.
Fannie.....		" 16..	33·44	7 64	" " St. John.
Joseph.....		" 16..	53·78	9 32	" " " "
Clymeric.....		" 21..	10·39	5 80	" yacht, " "
Victoria.....	700	" 22..	1,001·93	88 16	Paddle, pass., " "
G. D. Hunter.....		" 29..	67·97	10 44	Screw, tug, " "
Ernest.....		May 2..	12·58	6 04	" " " "

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—New Brunswick and P. E. Island Division—*Concluded.*

BOILERS AND MACHINERY — *Concluded.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Elliott		May 7	367 50	34 36	Screw, freight, coasting.
Elfin	70	" 8..	122 42	17 76	Paddle, ferry, Charlottetown.
Nelson		" 8..	32 80	7 64	Screw, tug, "
Electra.. ..	40	" 8..	106 96	16 56	" pass., " "
Wm. Aitken	25	" 8..	74 87	11 00	" " " "
Fred M. Batt	25	" 9..	59 90	9 80	" tug, Charlottetown.
T. A. Stewart		" 12..	35 94	7 88	Twin-screw, tug, Charlottetown.
Montague	75	" 12..	129 55	18 32	Paddle, ferry, Georgetown.
Frank C. Batt	40	" 13..	32 90	7 64	Screw " Summerside.
Flushing	212	" 15..	177 65	22 24	" tug, St. John.
James Kolly		" 16..	31 21	7 48	" " " "
Storm King	40	" 16..	107 87	16 64	" " " "
Martello		" 17..	33 65	7 72	" " " "
Marguerite	40	" 19..	79 66	6 60	" pass., St. Andrews.
Beaver	20	" 21..	84 73	11 80	" " St. John.
Brunswick (B.of Minas	300	" 23..	184 27	22 72	" " " "
(B.of Fundy	40				
Fanchon	40	" 26..	110 61	16 88	Paddle " " "
Annie Currier		" 27..	10 56	5 88	Screw, tug " "
Ada		" 27..	3 66	5 32	" yacht " "
Meta		" 28..	5 05	5 40	" " " "
Eva Johnson		" 28..	15 77	6 28	" tug " "
Randolph		" 28..	8 71	5 72	Twin-screw, tug " "
Lillie	65	June 2..	71 64	10 76	Screw, pass. " "
Frederick A.		" 5..	31 11	7 48	" tug " "
Tangent		" 1..	35 74	7 88	Twin-screw, tug " "
Zuleika		" 6..	15 87	6 28	Screw, yacht " "
St. Kilda		" 16..	55 64	9 48	Paddle, tug, Chatham.
Alexandra (River	397	" 16..	200 72	24 08	Screw, pass. " "
(Straits ...	120				
Mascott		" 17..	70 50	10 60	" tug " "
St. Andrew		" 17..	76 64	11 16	" " " "
Miramichi	100	" 17..	75 18	11 00	" pass. " "
St. George	200	" 17..	277 78	30 24	Paddle " " "
Wenonah		" 17..	9 02	5 72	Screw, yacht " "
Mary Odell		" 17..	28 92	7 32	" fish boat " "
Edith		" 17..	21 55	6 76	" tug " "
Mildred		" 4..	40 11	8 20	" " St. John.
Arthur		" 17..	4 99	5 40	Screw, yacht, Chatham.
Sarcelle		" 17..	21 86	6 68	" tug " "
Wm. M		" 17..	29 11	7 32	" " " "
St. Nicholas	100	" 17..	62 20	9 96	" pass. " "
Sybella H	40	" 17..	70 68	10 68	Paddle, ferry " "
Bridgetown.		" 18..	14 66	6 20	Screw, tug " "
Grip		" 18..	7 18	5 56	" " " "
Grey Loggie		" 18..	99 20	12 92	" freight " "
Laura		" 18..	13 55	6 12	" tug " "
Eva		" 18..	18 01	6 44	" fish boat " "
Rustler	200	" 18..	101 54	16 16	Paddle, pass., Newcastle.
Lady Dufferin	40	" 18..	47 48	8 76	" ferry " "
Bessie		" 19..	5 18	5 40	Screw, fish boat " "
Irene		" 19..	10 29	5 80	" tug " "
Zulu		" 19..	17 60	6 44	Paddle " " "
St. Isidore		" 19..	141 75	16 36	" " Chatham.
Total ..			13,467 40	1,703 76	

W. L. WARING,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended June 30, 1902.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Campobello		Aug. 5..	39·81	8 12	Screw, ferry, Eastport.
Lubec.		" 5..	50·94	9 08	" " "
Henry F. Eaton		" 6..	240 04	27 20	" pass., Calais.
R. G. Kellick.		" 5..	33·14	7 64	" " Eastport.
Phantom.		" 5..	38·28	8 04	" " "
Luce Bros		" 5..	88·82	12 04	" " "
G. B. Otis.		" 6..	25·16	7 00	" " "
Ethel.		" 6..	28·59	7 32	" " "
Judge Moore		" 7..	27·10	7 16	" " "
Julius Wolff.		" 7..	24·01	6 92	" " "
Eastport.		" 7..	64·29	10 12	" ferry "
St. Croix.		Dec. 16.	1,993·58	167 52	" pass., St. John to Boston.
		1903.			
State of Maine.		June 11..	1,409·99	120 80	Paddle, pass. "
Cumberland.		April 23..	1,605·82	136 48	" " "
Prince Rupert		June 7..	1,158·44	100 64	" " St. John to Digby
Total.			6,828·01	636 08	

W. L. WARING,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels not Inspected for the Year ended June 30, 1902.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Reg-istered Tonnage.	Remarks. — Why not inspected and class of Vessel.
Borrioboola Gha	95 77	60 34	Inspected in July.
Atlas	15 79	10 74	" "
Nellie H.	7 52	5 12	" "
Henrietta	19 12	13 00	" "
Victor	45 51	28 67	" "
Squirrel	13 11	8 97	" "
Florence	19 33	13 25	" "
St. Lawrence	50 82	10 51	" "
Nyanza	83 21	49 01	" "
Loyalist	17 57	11 07	Not ready.
Viking	127 70	86 84	Extended certificate to get all together.
Gracie Bell	10 52	7 16	Laid up.
Nautilus	26 58	18 07	"
Delta	19 93	12 12	Could not reach her.
Wonola	25 10	17 10	Out of district.
Killsborough	228 67	66 13	Would not inspect. Owned by P.E.I. Govt.
Scout	9 26	4 07	Getting new engine and boiler.
Peri	11 77	8 00	Laid up.
Jubilee	16 52	11 24	Could not reach her.
Carrie Knight	5 88	4 00	Not applied for.
Nelson	64 34	43 75	Out of district.
Ada G.	102 05	30 55	Laid up.
Southport	239 92	186 15	Would not inspect. Owned by P.E.I. Govt.
Derby	11 66	8 66	Laid up.
Lottie	5 00	.	"
Electric	3 74	2 55	"
Calla	9 79	6 66	"
Total	1,286 18	723 73	

W. L. WARING,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the year ended June 30, 1902.

NEW BRUNSWICK AND P. E. ISLAND DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certifi- cate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902		\$ cts.	
Jean Kathleen P'ker...	300	July 9..	230 85	10 00	Barge, St. John river.
Dirigo	40	" 20..	70 13	10 60	Screw, pass., St. John.
Neptune	40	Aug. 1..	71 15	10 68	" " "
Marguerite	40	" 7..	19 66	6 60	" " St. Croix.
Adino Padock		Not issued	102 94	16 24	Paddle, ferry, Rothesay.
Serena E.	40	April 11..	24 94	7 00	Screw, pass., Cumbl'd Basin.
Elliot		Sept. 3..	367 50	34 36	" Freight, coasting.
Aurora	200	Oct. 2..	364 24	37 12	" pass., St. John.
Aberdeen	300	" 8..	243 86	27 52	Stern wheel pass., "
Western Extension....	280	Sept. 28..	424 89	41 92	Paddle, Ferry, "
Spr'ghill (Bas. of Minas	100)	" 22..	189 05	22 12	Screw, pass., Basin of Minas.
Onangondy (& B. of F'ndy	60)	Dec. 24..	294 75	31 60	Paddle, Ferry, St. John.
		1903			
E. Ross	40	Mar. 13..	29 63	7 40	Screw, Ferry, St. John.
Springfield	254	" 18..	232 73	26 64	Stern wheel, pass., "
Hampstead	150	" 21..	234 52	26 80	Screw " "
Clifton	200	" 21..	138 21	19 04	Stern wheel " "
Northumberland	350	" 27..	1,255 46	108 40	Twin scr., pass., Northumberland Sts.
Jacques Cartier	300	" 27..	379 96	38 40	Paddle " " "
Princess	350	" 27..	541 79	51 36	Screw " " "
Star	300	" 29..	461 03	44 88	Paddle, pass., St. John.
David Western	450	" 31..	765 15	69 20	" " "
Maggie Miller	150	" 31..	104 66	16 40	" Ferry, Millidgeville.
Bismark	40	April 4..	49 04	8 92	" pass., St. John.
May Queen	370	" 7..	539 40	51 12	" " "
Serena E.	40	" 15..	24 94	7 00	Screw " Cumbl'd Basin.
Victoria	700	" 22..	1,001 93	88 16	Paddle " St. John.
Storm King	40	May 2..	107 87	16 64	Screw " "
Elliot		" 7..	367 50	34 36	" Freight, Coasting
Electra	40	" 8..	106 96	16 56	" pass., Ch'town, P.E.I.
Wm. Aitken	25	" 8..	74 87	11 00	" " "
Elfin	70	" 8..	122 42	17 76	Paddle, Ferry, "
Fred M. Batt	25	" 9..	59 90	9 80	Screw pass., "
Montague	75	" 12..	129 55	18 32	Paddle, ferry, Geo'town.
Frank C. Batt	40	" 13..	32 90	7 64	Screw, " Summerside.
Flushing	212	" 15..	177 65	22 24	" pass., St. John
Beaver	20	" 21..	84 73	11 80	" " "
Brunswick (Bas. of M.	300)	" 23..	184 27	22 72	" " "
Fanchon	40)	" 26..	110 61	16 88	Paddle " "
Lillie	65	June 2..	71 64	10 76	Screw " "
Prince Rupert	850	" 7..	1,158 44	100 64	Paddle " "
Alexandra	397 River	" 16..	200 72	24 08	Screw " Chatham.
Miramichi	120 Straits	" 17..	75 18	11 00	" " "
St. Nicholas	100	" 17..	62 20	9 96	" " "
St. George	200	" 17..	277 78	30 24	Paddle " "
Sybella H.	40	" 17..	70 68	10 68	" Ferry "
Lady Dufferin	40	" 18..	47 48	8 76	" " Newcastle.
Rustler	200	" 18..	101 54	16 16	" pass., "
Nyanza	122	" 18..	83 21	11 64	Screw " Bathurst.

I. J. OLIVE,
Hull Inspector, &c.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but registered elsewhere, for the year ended
June 30, 1902.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Campobello	100	Aug. 5..	39·81	8 12	Screw, ferry, Lubec.
Lubec	125	" 5..	50 94	9 08	" " "
Henry F. Eaton	300	" 6..	240 04	27 20	" pass., Calais,
Phantom... ..	50	" 5..	38·28	8 04	" " Eastport.
R. J. Killick.....	15	" 5..	33·14	7 64	" " "
Luce Brothers	50	" 5..	88·00	12 04	" " "
G. B. Otis.....	10	" 6..	25·16	7 00	" " "
Ethel.....	13	" 6..	28·59	7 32	" " "
Judge Moore	13	" 7..	27·10	7 16	" " "
Julius Wolff.....	25	" 7..	24·01	6 92	" " "
Eastport.	146	" 7..	64·29	10 12	" ferry, Lubec.
St. Croix.....	500	Dec. 16..	1,993 58	167 52	" pass., Boston.
		1903.			
Cumberland	600	April 23..	1,605·82	136 48	Paddle, " "
State of Maine.....	750	June 11..	1,409·99	120 80	" " "

I. J. OLIVE,
Hull Inspector.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected for the Year ended June 30, 1902.

BRITISH COLUMBIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Burt		July 2..	50 41	9 00	Twin screw, tug.
Halifax.....		" 2..	28 19	7 24	" "
Vancouver..		" 2..	49 96	9 00	" "
Dauntless		" 3..	128 30	15 24	" "
New Era.....		" 2..	55 96	9 48	" "
Casca	150	" 4..	589 73	55 20	Stern wheel, Yukon river.
Ramona.....	75	" 10..	250 79	28 08	" Fraser river.
Viking.....		" 6..	20 77	6 68	Screw, tug.
Duchess.....	40	" 8..	145 48	19 60	Stern wheel, Upper Columbia river.
Hyak	20	" 8..	39 04	8 12	" "
Pert.....		" 8..	6 44	5 48	Screw, freight "
Selkirk.....		" 8..	58 49	9 64	Stern wheel, yacht "
Rossland	300	" 11..	883 55	78 72	" frt. & pass., Colum. riv.
Lytton.....	100	" 11..	451 66	44 16	" " "
Nelson	125	" 12..	496 01	47 68	" Kootenay Lake.
Ymir		" 12..	69 74	10 60	Screw, tug "
Valhalla.....	30	" 12..	153 23	20 24	" " and pass., Kootenay Lake.
Moyie.....	250	" 13..	834 81	74 80	Stern wheel, frt. & pass. "
Proctor		" 13..	43 12	8 44	Screw, tug "
Flirt.....		" 13..	3 58	5 32	" yacht "
Surprise.....		" 13..	14 80	6 20	" tug "
Kootenay.....	300	" 14..	117 09	97 36	Stern wheel, frt. & pass., Columb. river.
Illicillewaet.....	20	" 14..	97 92	12 84	" " "
Minto.....	250	" 15..	828 91	74 32	" " "
Columbia		" 15..	49 84	9 00	Screw, tug "
Slocan.....	300	" 16..	578 03	54 24	Stern wheel, frt. & pass., Slocan lake.
Alert		" 16..	3 11	5 24	Screw, pass. "
Sandon.....	50	" 17..	96 22	12 68	" " "
Arrow.....		" 17..	4 50	5 40	" tug "
Hercules.....	50	" 18..	64 68	10 20	" tug and pass, Kootenay lake.
Alberta.....	200	" 19..	508 15	48 64	Stern wheel, frt. & pass. "
Haylis.....		" 19..	43 81	8 52	Screw, tug "
International.....	300	" 20..	525 55	50 08	Stern wheel frt. & pass. "
Argenta.....	40	" 20..	206 32	24 48	" " "
Kaslo	500	" 22..	764 77	69 20	" " "
Kokanee.....	200	" 22..	347 50	35 84	" " "
Archer.....	40	" 24..	15 32	6 20	Screw " Columbia riv.
Lardeau.....	17	" 24..	9 60	5 80	" " "
Denver.....		" 25..	8 51	5 72	" yacht, Shuswap lake.
Joan.....	400	Aug. 5..	821 21	73 68	Twin screw, frt. & pass., coast B. C.
Danube	300	" 16..	886 89	78 96	Screw, frt. & pass. "
Bermuda		" 23..	72 03	10 76	" tug "
Mamie	12	" 24..	89 60	12 20	" tug and pass. "
Lapwing.....		Sept. 5..	150 73	17 08	" freight "
Saturna		" 12..	22 05	6 76	" tug "
Surprise.....		" 12..	74 71	11 00	" " "
Staffa		" 16..	51 30	9 08	" freight "
Willapa	100	" 19..	373 09	37 84	" freight and pass. "
Queen City...	100	" 20..	391 21	39 28	" " "
Mystery.....	20	" 20..	64 80	10 20	" " "
Tees.....	125	Oct. 3..	679 15	62 32	" " "
Thompson.....	10	" 16..	149 80	20 00	Stern wheel, Shuswap lake.
Ethel Ross.....		" 16..	82 05	11 56	" " "
Aberdeen	250	July 15..	554 04	52 32	" Okanagon lake.
Thistle.....		Oct 24..	2 43	5 16	Screw, fishing tug.
Nell		" 11..	207 97	24 64	Twin screw, freight, coast B. C.
Mist		" 25..	28 68	7 32	Screw, yacht "
Charmer.....	500	Nov. 4..	1,044 41	91 52	" freight and pass. "
Princess Louise.....	98	" 5..	931 76	82 56	Paddle " "
Delta.....		" 23..	25 20	7 00	Screw, freight "
Water Lily.....		Dec. 5..	73 81	10 92	Stern wheel, harbour water boat.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.,—British Columbia Division.—*Concluded.*

BOILERS AND MACHINERY *Concluded.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1902.		\$ cts.	
Willie.....	27	Dec. 13..	82.60	11 64	Stern wh. frt. & pass., Alberni canal.
Maude.....		Nov. 21..	174.99	19 00	Screw, freight, coast B. C.
		1903.			
Sadie.....	25	Jan. 11..	49.30	8 92	Screw, ft. & pass., coast, B.C.
Otter.....	70	" 13..	365.97	37 28	" " "
Hope.....	12	" 10..	78.49	11 32	" " "
Albion.....		" 27..	88.11	12 04	" tug, " "
Thistle.....	50	" 30..	222.36	25 76	" ft. & pass., " "
Chieftain.....		" 30..	64.80	10 20	" tug, " "
Daisy.....	15	Feb. 3..	60.10	9 80	" tug & pass., " "
Barbara Boscowitz. .	125	" 5..	337.92	35 04	" ft. & pass., " "
J. L. Card.....		" 11..	141.06	16 28	Twin screw, ft. & pass., " "
Clayoquot.....	25	" 12..	87.18	11 96	Screw, " " "
Senator.....	29	" 10..	27.63	7 24	" pass., " "
Alert.....		" 25..	43.81	8 52	" tug, " "
Pilot.....	22	Mar. 3..	279.05	30 32	" tug & pass., " "
Oscar.....		" 5..	95.42	12 60	" ft., " "
Selkirk.....	35	" 11..	141.63	19 36	" ft. & pass., " "
Amur.....	228	" 7..	907.17	80 56	" " " "
Wyefield.....		" 11..	3,234.59	266 80	Freight screw, foreign.
Czar.....		" 19..	152.18	17 16	Screw tug, " "
Constance.....	12	" 20..	49.52	9 00	" " " "
Iroquois.....	40	April 1..	195.49	23 60	Screw, ft. & pass., " "
Nell.....	25	" 2..	207.97	24 64	" " " "
Lorne.....	20	" 24..	287.96	31 04	" tug, " "
Yosemite.....	500	" 26..	1,525.03	130 00	Paddle, ft. & pass., " "
R. P. Rithet.....	81	" 28..	816.69	73 36	Stern wheel, ft. & pass., Victoria & Fraser River.
York.....	70	May 12..	134.00	18 72	Twin screw, ft. & pass., Okanagan Lake
Revelstoke.....	90	" 14..	308.55	32 72	Stern wheel, ft. & pass., Columbia R.
Fawn.....		" 14..	32.70	7 64	Screw tug, " "
Venture.....		" 28..	654.52	57 40	Twin screw, ft., " "
Trader.....	20	June 5..	167.18	21 36	Screw, ft. & pass., " "
Mount Royal.....	130	" 9..	471.03	45 68	Stern wheel, ft. & pass., Skeena Riv.
City of Nanamio...	500	" 9..	761.37	68 88	Twin screw, ft. & pass., coast, B.C.
Victoria.....	10	" 17..	2,373.87	197 92	Screw, ft., foreign.
Strathcona.....	250	" 20..	596.28	55 68	St'n wheel, ft. & p., inland waters, B.C.
Comet.....	12	" 23..	85.26	11 80	Screw tug, coast B.C.
*Greenwood.....		" 23..	22.95	13 68	" " " "
Nagasaki.....		" 24..	15.13	6 20	" " " "
Saturna.....		" 24..	22.05	6 76	" " " "
Total.....			30,782.72	3,184 72	

*Dues and fees for 1901-02.

J. A. THOMPSON,
Steamboat Inspector, Victoria, B C.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected in Canada but Registered elsewhere for the year ended June 30, 1902.

BRITISH COLUMBIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Majestic.....	200	July 9..	659·00	60 72	Screw, Ft. & P., Can. & foreign ports.
Queen.....	402	Aug. 6..	2727·80	226 24	" " "
Mexico.	100	" 6..	1672·09	141 76	" " "
Garland.....	50	" 10..	166·61	21 36	" " "
Cottage City.....	273	" 12..	1885·11	158 80	" " "
City of Puebla.	511	Sept. 2..	2623·88	217 92	" " "
Rosalie.....	127	" 28..	318·51	33 52	" " "
		1903.			
Dolphin	235	April 8..	824·26	73 92	" " "
Humboldt	311	" 23..	1075·00	94 00	" " "
City of Seattle	592	May 8..	1411·05	120 88	" " "
Umatilla..	424	June 11..	3069·76	253 60	" " "
Spokane	297	" 12..	2036·20	170 88	" " "
Total.			18469·27	\$1,573 60	

STEAM Vessels not inspected for the year ended June 30, 1902.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Victoria	106·60	67·16	Laid up, Stern wheel, F. & P.
Idler.....	3·88	1·94	" Screw.
Alert	3·11	2·12	" "
Mermaid.....	128·25	87·42	To be inspected later. Being refit after stand'g.
Sunbury.....	37·72	26·03	No application. Screw F. & P.
	279·56	184·67	

J. A. THOMSON,
Steamboat Inspector, Victoria, B.C.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the year ended June 30, 1902.

BRITISH COLUMBIA AND YUKON DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Prospector	120	July 1..	263	29 04	Passenger and freight, Yukon river.
Marjorie	25	" 1..	20	6 60	" " "
John C. Barr.	170	Oct. 13..	547	51 76	" " "
Quick	12	July 11..	32	10 36	" " "
Gold Star	130	Aug. 5..	168	21 44	" " "
Tyrrell	150	" 8..	678	62 24	" " "
Lightning	100	" 26..	557	52 56	" " "
Scotia	100	Sept. 25..	214	43 36	" " Atlin lake.
Gleaner	150	" 27..	241	27 36	" " Taku "
Kilbourne		" 27..	87	11 96	Tug, Bennett lake.
Mabel F.		" 27..	10	5 80	" " "
Winneta		Oct. 5..	24	6 92	" British Columbia waters.
Leonora	30	" 2..	33	7 64	" " "
†Saga		" 12..	252	5 00	Freight " "
Fingal		" 8..	91	12 28	" " "
Senator	30	" 23..	28	7 24	Passenger and tug " "
Flyer		" 11..	48	8 84	Tug " "
Kildonan		Nov. 4..	57	9 08	" " "
Etta White	15	" 11..	97	12 76	Passenger and tug " "
Blonde		" 11..	33	7 64	Tug " "
Lottie		" 14..	29	7 32	" " "
Star		" 13..	14	6 12	" " "
Stampede		" 9..	12	5 96	" " "
Hong Kong		" 18..	36	7 88	" " "
Clansman		" 6..	72	10 76	Freight " "
Belle		" 17..	67	10 36	Tug " "
Cassiar	200	" 27..	597	55 76	Passenger and freight " "
Fraser		" 9..	36	7 88	Tug " "
Eagle		" 29..	35	7 80	" " "
Eva		Oct. 19..	35	7 80	" " "
Orillia		Dec. 9..	12	5 96	" Fraser river.
Sea Lion		" 17..	6	5 48	" British Columbia waters.
Sea Gull		" 17..	3	5 24	" " "
Psyche		Nov. 4..	3	5 24	Yacht " "
Donney		Dec. 31..	15	6 20	Tug " "
Milkmaid		" 30..	7	5 56	" Fraser river.
		1903.			
Active	20	Jan. 17..	172	21 76	Pass. and tug, British Columbia waters.
Comox	60	" 27..	101	16 08	" " "
Transfer	120	" 27..	264	29 12	" Fraser river.
†Troubador		" 15..	18	12 88	Tug, British Columbia waters.
Coquitlam		Feb. 2..	256	28 48	Pass. and freight " "
Ramona		" 12..	251	28 08	" Fraser river.
†Olive	20	" 11..	71	21 36	" " "
Autolycus		" 8..	25	7 00	Tug, British Columbia waters.
Defiance	39	" 8..	90	12 20	Pass. and freight " "
Magnet		" 19..	24	6 92	Tug " "
Reliance		" 20..	36	7 88	" " "
Robert Dunsmuir	40	" 6..	232	26 56	Pass. and freight " "
Stranger		" 20..	21	6 68	Tug " "
Esperanza		" 20..	31	7 48	" " "
Stella		" 20..	16	6 28	" " "
Fearless		" 20..	53	9 24	" " "
Native		Mar. 1..	52	9 16	" " "
Cleeve		" 1..	36	7 88	" " "
New Era		" 1..	56	9 48	" " "

* Arrears of over 100 tons, 1899, 1900 and 1901.
1901 and 1902.

† Special inspection fee.

‡ Dues and fees for

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—British Columbia and Yukon Division—*Continued.*BOLLERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1903.		\$ cts.	
Halifax		March 1.	28	7 24	Tug, British Columbia waters.
Vancouver		" 1.	50	9 00	" "
Tyce		" 1.	32	7 56	" "
Capilano	25	" 17.	231	26 48	Pass. and freight "
Bermuda		" 1.	72	10 76	Tug "
Vigilant		" 1.	29	7 32	" "
Enterprise		" 1.	12	17 88	" "
Vulcan		" 1.	77	11 16	" "
Starling		" 1.	8	5 64	" "
Princess May	350	" 20.	1,394	119 52	Passenger and freight, foreign.
Surrey	50	" 25.	263	29 04	" " Fraser river.
North Star		" 15.	8	5 64	Tug, Fraser river.
Firefly		" 15.	46	8 68	" "
Lois	10	" 25.	25	7 00	Pass. and tug, B. C. waters.
Champion		" 25.	100	13 00	Freight, "
Alice		" 1.	35	7 80	" "
Tepic	15	" 25.	71	10 68	Pass. and tug, "
Glen Rosa		April 7.	18	6 44	Tug, Skeena river.
Erie		" 1.	27	7 16	" B. C. waters.
Spray		" 1.	8	5 64	Yacht, Fraser river.
Clara Young		" 1.	31	7 48	Tug "
Chehalis	15	" 1.	54	9 32	Pass. and tug, B. C. waters.
Terra Nôva		" 1.	47	8 76	Freight, "
Fern		" 1.	24	6 92	Tug, "
Gipsy		" 1.	10	5 80	" "
North Vancouver	200	" 1.	104	16 32	Pass. ferry, Burrard Inlet.
St. Clair	25	" 10.	68	10 44	Pass. and tug, B. C. waters.
Surprise		" 1.	75	11 00	Freight, "
Evangeline		" 17.	14	not paid	Tug, Alert bay.
Swan		" 18.	36	7 88	" Namu.
Muriel		" 19.	44	8 52	" Lowe inlet.
Nora		" 21.	20	6 60	" Skeena river.
Florence		" 21.	30	7 40	" "
Westminster		" 21.	18	6 44	" "
Maime		" 21.	9	not paid	" "
Hazelton	150	" 21.	378	38 24	Pass. and freight, Skeena river.
Monte Christo	60	" 21.	266	29 28	" "
Lottie N.		" 22.	34	7 72	Tug, "
Unican	40	May 1.	137	18 48	Pass. and freight, B. C. waters.
Hubert		" 3.	6	5 48	Yacht, "
Kootenay		" 1.	8	5 64	" "
*Mouping		" 11.	20	19 80	" "
†Dreadnought		" 1.	33	15 28	Tug, "
Beaver		April 1.	545	57 60	Pass. and freight, Fraser river.
Dauntless		May 1.	128	18 24	Tug, B. C. waters.
Minto	20	" 1.	36	7 88	Pass. and freight, Harrison river.
Defender	30	" 1.	216	25 28	" "
Uno		" 1.	12	5 96	Tug, B. C. waters.
‡Bermuda	25	" 1.	72	5 00	Pass. and tug, B. C. waters.
Eagle	12	" 3.	35	7 80	" "
Iris		" 1.	38	8 04	Tug, "
Brunette		" 1.	37	7 96	" "
Albert Lee		" 1.	19	not paid	" "
Viking		" 1.	21	6 68	" "
‡Vancouver		" 1.	50	5 00	Pass. and tug, "
Ruth		" 1.	71	10 68	Tug, "
Superior		" 1.	44	8 52	" "
Dorothy		" 1.	20	6 60	" "
Dolphin		" 1.	20	6 60	" "
Clive		June 1.	35	7 80	" Skeena river.

*Dues and Fee for 1900, 1901 and 1902.
tion Fee.

†Dues and Fee for 1901 and 1902.

‡Special Inspec-

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—British Columbia and Yukon Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Canadian.....	150	June 28..	716	65 28	Pass. and freight, Yukon river.
Dawson.....	150	" 28 ..	779	70 32	" "
Sybil.....	150	" 28..	654	60 32	" "
Total.....			12,900	1,797 72	

STEAM Vessels Inspected in Canada but registered elsewhere for the year ended June 30, 1902.

BRITISH COLUMBIA AND YUKON DIVISION.

BOILERS, MACHINERY AND HULL.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903✓			
Portus B. Wear.....		July 27..	400	40 00	Passenger and freight, Yukon river.
Sarah	250	" 29..	1211	104 88	" "
Louise.....	150	Aug. 10..	718	65 44	" "
T. C. Powers.....	125	" 2..	820	73 60	" "
Leah.....	135	" 2..	478	46 24	" "
Monarch.....	125	" 12..	463	45 04	" "
Leon.....	150	" 27..	692	63 36	" "
Linda	200	" 28..	692	63 36	" "
Robert Kerr	60	Sept. 12..	719	65 52	" "
May West	50	" 14..	134	18 72	" "
Mainlander.....	200	Jan. 14..	505	48 08	" Puget Sound.
North Pacific.....	200	May 30..	489	47 12	" "
Hannah.....	250	June 16..	1211	104 88	" Yukon river.
Total.....			8,532	786 56	

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector, Vancouver, B.C.

2-3 EDWARD VII., A. 1903

Steam Vessels not inspected for the year ended June 30, 1902.

BRITISH COLUMBIA AND YUKON DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks.	
			Why not Inspected and Class of Vessel.	
Calodonia.	569	359	Pass. and freight.	Laid up.
Strathcona.....	596	376	"	"
Welcome.....	32	20	"	"
City of Tipella	19	12	Tug.	No application.
On Time.....	11	4	"	"
Greenwood.	23	16	"	"
Rothsay	553	348	Pass. and freight.	Laid up.
Lorelei	32	20	"	To be inspected later on.
White Horse.....	987	637	"	"
Selkirk	777	490	"	"
Yukoner.....	781	492	"	"
Columbian.	716	455	"	"
Wilbur Crimmin.	168	106	"	"
Zealandian.	180	141	"	"
Joseph Clossett. ...	147	93	"	"
Bailey.....	193	132	"	"
Clifford Sifton. ...	291	183	"	"
Victorian	716	455	"	"
Anglian	161	114	"	Laid up.
Eldorado.	466	260	"	"
J. P. Light.....	719	409	Freight.	"
Lightening.....	557	357	Pass. and freight.	"
Monarch.	284	179	Freight.	"
Emma Nott	73	46	"	"
W. Ogilvie.	82	55	Pass. and freight.	"
Mabel F.	10	7	Tug.	"
Australian.	420	308	Pass. and freight.	"
Kilbourne	87	55	Tug.	"
Total.	9,650	6,117		

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector, Vancouver, B.C.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the year ended June 30, 1902.

BRITISH COLUMBIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
Casca.....	150	July 4..	589.73	55 20	Stern wheel, Yukon river.
Ramona.....	75	" 10..	250.79	28 08	" Fraser river.
Joan.....	400	Aug. 5..	821.21	73 68	Twin screw, waters of B. C.
Danube.....	300	" 16..	886.89	78 96	Screw, Victoria and northern ports.
Mamie.....	12	" 24..	89.60	12 20	" " " "
Lapwing.....		Sept. 5..	150.73	17 08	" waters of B. C., freighting.
Willapa.....	100	" 19..	373.09	37 84	" Victoria and northern ports
Mystery.....	20	" 20..	64.80	10 20	" " " " "
Queen City.....	100	" 20..	391.21	39 08	" " " " "
Tees.....	125	Oct. 3..	679.15	62 32	" " " " "
Belle.....	12	" 5..	66.62	10 36	" Vancouver and waters of B.C.
Saga.....		" 10..	252.47	25 16	Twin screw, freight and fishing.
Senator.....	30	Sept. 11..	27.63	7 24	Screw, passenger, inland waters
Nell.....		Oct. 11..	207.97	24 64	Twin screw, freighting.
Charmer.....	500	Nov. 4..	1,044.41	91 52	Screw, Victoria and mainland.
Princess Louise.....	98	" 5..	931.76	82 64	Paddle, " "
Etta White.....	15	" 11..	97.35	12 76	Screw, Vancouver and northern ports.
Cassiar.....	200	" 20..	597.18	55 76	" " " " "
Maude.....		" 21..	174.99	19 00	" freighting.
		1903.			
Hope.....	12	Jan. 10..	78.49	11 32	" tug and passenger.
Sadie.....	25	" 11..	49.30	8 92	" " " "
Otter.....	70	" 13..	365.97	37 28	" freight and passenger.
Comox.....	140	" 15..	101.17	16 08	" " " "
Transfer.....	120	" 27..	264.16	29 12	Stern wheel, freight & pass. Fraser R.
Thistle.....	50	" 29..	222.36	25 76	Screw, freight and passenger.
Chieftain.....	20	" 30..	64.80	10 20	" " " "
Daisy.....	15	Feb. 3..	60.10	9 80	" tug and passenger
Barbara Bascowitz.....	125	" 5..	337.92	35 04	" freight & pass. northern ports.
Robert Dunsmuir.....	40	" 6..	231.75	26 56	Twin screw, freight and passenger.
Coquitlam.....	75	" 7..	256.33	28 48	Screw, freight and passenger.
Defiance.....	39	" 8..	89.88	12 20	" " " "
Senator.....	30	" 10..	27.63	7 24	" " " "
Olive.....	20	" 11..	71.32	21 36	For 2 yrs. stern wheel, Fraser river.
Clayoquot.....	50	" 12..	87.18	11 96	Screw, freight and passenger.
Pilot.....	22	March 3..	279.05	30 32	" tug " "
Amur.....	228	" 7..	907.17	80 56	" freight and passenger
Wyefield.....		" 11..	3,234.59	266 80	" " Canadian and foreign ports
Selkirk.....	35	" 11..	141.63	19 36	" " and passenger.
Active.....	20	Jan. 31..	171.74	21 76	" tug and passenger.
Capilano.....	25	March 12..	231.14	26 48	" Vancouver and northern ports.
Constance.....	12	" 20..	49.52	9 00	" tug and passenger.
Princess May.....	359	" 20..	1,393.76	119 52	Twin screw, B. C. and northern ports.
Iroquois.....	40	April 1..	195.49	23 60	Screw, freight and passenger.
Tepic.....	15	" 1..	70.87	10 68	" tug and passenger.
Nell.....	25	" 2..	207.97	24 64	Twin screw, freight and passenger.
Surrey.....	50	" 11..	263.26	29 04	Paddle, ferry, Fraser river.
Beaver.....	150	" 12..	545.44	51 60	Stern wheel, " "
Lorne.....	20	" 24..	287.96	31 04	Screw, tug and passenger.
North Vancouver.....	200	" 25..	103.83	16 32	Screw, ferry, Burrard Inlet.
Yosemite.....	500	" 26..	1,525.03	130 00	Paddle, Victoria and mainland.
R. P. Rithet.....	81	" 28..	813.69	73 36	Stern wheel, Victoria and mainland.
Eagle.....	12	May 3..	31.74	7 80	Screw, tug and passenger.
Vancouver.....	12	" 7..	49.96	9 00	" " " "
St. Clair.....	25	" 10..	68.12	10 46	" " " "
Chehalis.....	15	" 13..	53.75	9 32	" " " "
Unican.....	40	" 16..	130.92	18 48	" " " "
Ramona.....	75	Feb. 12..	250.79	28 08	Stern wheel, Fraser river.
Bermuda.....	25	May 21..	72.03	10 76	Screw, tug and passenger.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—British Columbia Division—*Concluded.*

HULL INSPECTION *Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Minto.....	20	May 22..	36·19	7 88	Stern wheel, ferry Fraser river.
Defender..	30	" 22..	216·10	25 28	" " " " "
Venture		" 28..	654·52	57 40	Twin screw, freight, northern ports.
Lais.....	10	April 1..	25·15	7 00	Screw, tug and passenger.
Trader	20	June 5..	167·18	21 36	" freight and passenger.
Superior....	25	" 7..	44·18	8 52	" tug and passenger.
City of Nanaimo..	500	" 9..	761·37	68 80	Twin screw, freight and passenger.
Mount Royal.....	130	" 9..	471·03	45 68	Stern wheel, Stikine and Skeena rivers
Victoria.....	10	" 17..	2,373·87	197 92	Screw Canadian and foreign ports.
Stratheona.....	250	" 20..	596·28	55 68	Stern wheel, inland waters of B. C.
Comet	12	" 23..	85·26	11 80	Screw, tug and passenger.

STEAM Vessels Inspected in Canada but registered elsewhere for the year ended June 30, 1902.

		1902.			
Majestic.....	200	July 9..	659·00	60 72	Screw, B. C. ports and Puget Sound.
Queen.....	404	Aug. 6..	2,727·80	226 24	" " San Francisco.
Mexico.....	100	" 6..	1,272·09	141 76	" Canadian and foreign ports.
Garland.....	50	" 10..	166·61	21 36	" " "
Cottage City	273	" 12..	1,885·11	158 80	" " "
City of Pueblo.....	511	Sept. 2..	2,623·88	270 92	" " "
Rosalie.....	127	" 28..	318·51	33 52	" " "
		1903.			
Mainlander	200	Jan. 14..	505·19	48 40	" " "
Dolphin.....	235	April 8..	824·26	73 92	Twin-screw " "
Humboldt.....	311	" 23..	1,075·00	94 00	Screw " "
City of Seattle.....	592	May 8..	1,411·05	120 88	" " "
North Pacific.....	200	June 6..	488·73	47 12	Paddle " "
Umatilla.....	424	" 11..	3,069·76	253 60	Screw " "
Spokane.....	297	" 12..	2,036·20	172 88	" " "

R. COLLISTER,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1902.

KEEWATIN, MANITOBA AND NORTH-WEST TERRITORIES DIVISION.

BOILERS, MACHINERY AND HULL INSPECTION.

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		\$ cts.	
W. J. Aikens.....		July 2..	41.82	8 36	Screw, tug, Thunder bay.
Energy.....		Not issued	116.45	14 28	" " "
Inez.....	25	July 3..	59.10	9 72	" tug and pass., Thunder bay,
Georgina.....	25	" 4..	43.78	8 52	" " "
Herbert.....		" 6..	21.13	6 68	" tug, Thunder bay.
Inza.....		" 6..	8.79	5 72	" " "
Circe.....		" 6..	2.83	5 24	" " "
Orcadia.....		" 15..	23.16	6 84	" fish tug, Lake Superior.
Maud C.....		" 16..	5.16	5 40	" " "
Minola.....		" 16..	34.95	7 80	" " "
Nettie.....		" 17..	3.34	5 24	" " "
Rose May.....		" 17..	3.66	5 32	" " "
Bertha.....		" 17..	10.95	5 88	" " "
Siskewett.....	20	" 19..	47.17	8 76	" tug and pass., Lake Superior.
Swan.....		" 19..	7.76	5 64	" " Thunder bay
James Mayhew...		" 22..	16.94	6 36	" " Nepigon bay.
Kate Marks.....		" 22..	54.15	9 32	" " Lake Ellen.
Brothers.....		" 23..	17.50	6 44	" fish tug, Lake Superior.
Rambler.....		" 26..	6.14	5 48	" tug, Lake Nipigon.
Widgeon.....		Aug. 2..	2.21	5 16	" " Lake of the Woods.
Princess.....		" 3..	7.83	5 64	" " "
Mohican.....		" 5..	34.20	7 72	" " Rainy lake.
Thistle.....		Not issued	10.34	5 80	" pass. and frt., Rainy river.
Moose.....		Aug. 6..	38.30	8 04	" tug, Rainy lake.
Cicela B.....		" 10..	13.65	6 12	" " "
Lady Trip.....	10	" 9..	5.32	5 40	" " and pass., Turtle lake.
City of Alberton...	25	" 10..	67.72	10 44	" " " Rainy lake.
Maple Leaf.....		" 12..	81.84	11 56	" " Rainy river.
W. C. Vanhorne.....		" 14..	59.91	9 80	" " Lake of the Woods.
Ogema.....		" 31..	29.84	7 40	" fish tug, Lake Winnipeg.
Hazel.....		" 31..	7.52	5 64	" " "
Gracie B.....	40	" 10..	21.18	6 68	" pass., Red river.
Beaver.....		Sept. 14..	80.25	11 40	Stern pad., Saskatchewan river.
Mountain Bell.....		Not issued	4.12	5 32	Screw, Bow river, Banff.
Silver Spray.....		" "	1.56		" pass., Pillecal lake.
*Petrel.....		Jan. 1..	167.65	36 88	" " frt., Lake Manitoba.
Osprey.....		Not issued	21.22	6 68	" fish tug "
Princess.....		" "	6.65	5 56	" pass., Lake Killarney.
Iona.....		Sept. 26..	39.15	8 12	" tug, Lake Winnipegosis.
Lady Ellen.....		" 27..	18.56	6 52	" fish tug "
Manitou.....	20	" 27..	107.79	13 64	" pass. and frt. "
Isabel.....		" 27..	60.90	9 88	" tug "
		1903.			
Argyle.....	150	April 15..	77.70	11 24	" ferry, Rat Portage & Keewatin
Keenora.....	500	" 30..	486.34	46 88	Twin screw, pass. and frt. Rat Portage and Fort Frances.
Agwinde.....	125	" 30..	307.41	32 56	Stern pad. " " "
Catharine S.....	25	" 29..	66.60	10 36	Screw, pass. and frt., L. of the Woods
Edna Brydges.....	100	" 30..	176.05	22 08	" " " "
Queen.....		" 23..	31.65	7 56	" tug, Lake of the Woods.
Ethel Banning.....		" 23..	37.54	8 04	" " " "
Rambler.....	25	" 30..	25.83	7 08	" " and pass., L. of the Woods
Clipper.....	40	" 30..	52.95	9 24	" " " "
Pearl.....		May 2..	10.00	5 80	" " Lake of the woods.
Heather Bell.....		" 3..	21.18	6 68	" pass. and frt., L. of the Woods
Maple Leaf.....	75	" 3..	81.84	11 56	" " " "
Rocket.....		" 14..	55.61	9 48	" fish tug, Lake Winnipeg,

*Paid fees for 1900 and 1901.

2-3 EDWARD VII., A. 1903

STEAM Vessels Inspected, &c.—Keewatin, Manitoba and North-west Territories
Division.—*Concluded.*

BOILERS, MACHINERY AND HULL INSPECTION.—*Concluded.*

Name of Vessel.	Number of Passen- gers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and In- spection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
Fisherman.....		May 14..	44.22	8 52	Screw, fish tug, Lake Winnipeg.
Chieftain.....		" 14..	60.85	9 88	" " "
Angler.....		" 14..	16.16	6 28	" " "
City of Selkirk.....	75	" 17..	457.82	44 64	" pass and frt., Lake Winnipeg.
Premier.....	60	" 17..	413.99	41 12	" " "
		1903.			
Little Bobs.....		" 14..	13 19	6 04	" fish. tug, Lake Winnipeg.
Daisy.....		" 14..	26 33	7 08	" " "
Miles.....		" 14..	63 04	10 04	" " "
Highlander.....		" 14..	59 24	9 72	" " "
Princess.....	20	" 17..	405 44	40 40	" pass. & frt. "
Frank Burton.....		" 14..	52 00	9 16	" survey "
Idell.....		" 14..	53 92	9 32	" fish. tug "
Balmoral.....		" 14..	36 93	7 96	" " "
Sultana.....		Not issued	277 65	30 24	" freight "
Vicking.....		May 17..	17 00	6 36	" frt. & pass. "
Gertie H.....	200	" 17..	90 95	12 28	Stern paddle, pass. & frt., Red river.
Lady of the Lake.....	20	" 17..	201 43	24 08	Screw, pass. & frt., Lake Winnipeg.
Ethel.....	25	" 31..	20 20	6 60	" " Lake of the Woods.
Empress.....		" 16..	129 28	15 32	" tug "
Daisy Moore.....		" 16..	38 31	8 04	" " "
Phantom.....	40	" 22..	55 86	9 48	" pass. & frt. "
Day Star.....		" 23..	12 52	6 04	" private yacht "
Midge.....		" 24..	11 08	5 88	" tug "
St. Joe.....		" 29..	117 64	14 44	" wrecking, Lake Superior.
Shamrock.....		" 31..	79 84	11 40	" tug, Lake of the Woods.
Villeneuve.....		" 31..	27 58	7 24	" " Winnipeg river.
Cruiser.....		" 31..	26 92	7 16	" " Lake of the Woods.
Siskewett.....		" 22..	47 17	8 76	" " Lake Thunder bay.
Hudson Bay Messenger.....		June 2..	8 00	5 64	" priv. yacht, Lake of the Woods.
Spray.....		" 3..	8 99	5 72	" fish. tug "
Gem.....		" 4..	11 08	5 88	" " "
Kennina.....		" 4..	41 86	8 56	" tug "
Keewatin.....		" 4..	41 25	8 28	" " "
Gordon M.....		" 4..	3 01	5 24	" " "
D. L. Mather.....		" 10..	103 32	13 24	" " "
Sport.....		" 13..	16 26	6 28	" " Winnipeg river.
Majestic.....	40	" 16..	135 22	18 80	" pass. & frt., Rainy lake.
Mohican.....	12	" 16..	34 20	7 72	" " "
Thistle.....	10	" 16..	9 00	5 80	" " Rainy river.
City of Alberton.....		" 17..	67 54	10 44	" tug, Rainy lake.
Sultana.....		" 21..	3 35	5 24	" priv. yacht, Lake of the Woods.
Energy.....	200	" 24..	116 45	17 28	" pass. & frt., Thunder bay.
*Dolphin.....		" 24..	12 63	12 08	" tug, Lake Dix Mille Lacs.
William Whyte.....		" 25..	17 81	6 44	" " Lake Wabigoon.
Minniola.....		" 26..	9 20	5 72	" " Lake Manitou.
William Cross.....	10	" 26..	21 66	6 76	" tug & pass., "
Galatia.....	25	" 27..	46 10	8 68	" " Lake Wabigoon.
Irine.....	10	" 27..	9 17	5 80	" " "
Nora.....	20	" 28..	20 23	6 60	" " Eagle lake.
Caro.....		Not issued	14 47	...	" tug "
Total.....			6,459 55	1,084 44	

* Paid fees for 1901 and 1902.

GEO. P. PHILLIPS,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada, but registeed elsewhere, for the Year ended June 30, 1902.

KEEWATIN, MANITOBA AND NORTHWEST TERRITORIES DIVISION.

BOILERS, MACHINERY AND HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1903.		\$ cts.	
America	370	May 27..	681·37	.....	Screw, pass., Port Arthur & Duluth.
Seagul.....	30	June 17..	12·00	.....	" " Fort Frances and Couchiching.
Total			693·37	.....

STEAM Vessels not Inspected for the Year ended June 30, 1902.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Pastime	4·00	2·82	Screw yacht, not in commission.
Carry L.....	14·56	7·99	Side pad., frt., to be inspected, Seine river.
Undine.....	9·46	6·44	Screw, tug, " Turtle lake.
Minnetonka	68·24	46·37	" " Rainy river.
W. J. Aikens.....	41·82	25·00	" " Port Arthur.
James Mayhew.....	16·94	11·64	" " "
Kate Marks	34·15	43·15	" " Lake Ellen.
Geo. Ward.....	2·39	1·69	" not in commission, Savanne.
Minnehaha.....	2·42	·64	" " "
Minota.....	34·95	23·77	" " Rosport.
Ida	19·37	13·37	" " "
Minnewawa	4·61	3·71	Screw, yacht, to be inspected, Banff.
Dolly	2·57	2·00	" tug, " Wlnnipegosis.
Mocking Bird	38·02	25·85	" " not in commission, "
Jenny Lind.....	5·81	4·37	" " Whitefish lake.
John Glenn.....	14·07	6·00	" " to be insp'ted, L. of the Woods.
Lotto S	48·03	23·66	" " Winnipegosis.
Monarch.....	113·09	57·06	Side pad., tug, " L. of the Woods.
Josie.....	25·04	16·88	" frt., " Prince Albert.
Klondike.....	8·05	4·00	Screw, tug, " "
Mountain Bell.....	6·78	3·85	" " "
Annie Mc	13·42	11·10	" not in commission, Bear lake.
Beaver.....	34·51	22·21	" to be insp'ted, L. of the Woods.
Athabasca.....	166·73	125·85	Stern pad., not in commission Athabasca riv.
Lillian B.....	4·00	1·08	Screw, tug, to be inspected, Slave river.
Alpha.....	7·50	4·98	" " "
St. Joseph.....	27·06	16·06	Screw, ft., " McKenzie river.
Graham.....	360·19	223·51	Stern pad., pass. & ft., Athabasca & Slave R.
St. Alphonse	24·94	14·92	Screw, pass. & frt., McKenzie river.
Wrigley.....	104·59	66·92	" " "
Sparrow.....	49·28	27·90	" " "
Gale	2·62	0·97	" to be inspected, Seine river.
Mary Hatch	121·18	82·40	" " Lake of the Woods.
Chieftain.....	36·26	24·64	" " Rainy river.
Sunbeam.....	2·86	1·94	" not in commission.
Total	1,489·71	948·94	

GEO. P. PHILLIPS,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1902, their Class and Horse power, whether of Wood or Iron, their Gross and Registered Tonnage ; where built ; and where and how employed.

WESTERN ONTARIO DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and how employed.
J. L. Beckwith	10 20	Screw.....	Wood ...	61	33	Buffalo, N. Y.	Sault river, tug.
Florence M....	1 66	"	"	8	6	Owen Sound, O	" " "
Venetta.....	5 66	"	"	31	21	Toronto, Ont.	Georgian bay, yacht.
Llano.....	7 18	"	Composite	11	8	" "	Muskoka lakes, "
Ina	2 80	"	"	14	10	" "	" " "
Florence Main.	12 93	"	Wood.....	79	52	Mortimers Pt.	" " passenger.
City of Bala...	8 40	"	"	74	47	Bala, Ont.	" " "
Algoma.	54 00	"	Steel.....	157	107	Toronto. "	Sault Ste Marie, pass. ferry
Joe.....	6 43	"	Wood.....	57	39	Huntsville "	Lakes at Huntsville, pass.
Lady Franklin	1 20	"	"	5	4	Sparrowlake, O	Sparrow lake & vic'ty "
Penetang.....	20 93	"	"	102	64	Owen Sound, O	Georgian bay, tug.
John McKay.	13 50	"	"	34	23	Goderich, Ont.	Lake Huron, fishing tug.
Pauline Hickler	8 53	"	"	50	34	Buffalo, . Y.	Sault Ste Marie, tug.
C. E. Ainsworth	23 26	"	"	76	48	S. Ste Marie, M	Lake Superior, fishing tug.
Beatrice M....	4 26	"	"	36	25	Collingwood, O	Georgian Bay, " "
Huronie	244 66	"	Steel.	3,330	2,211	" Ont.	All lakes and rivers, pass
R. J. Morrell..	10 66	"	Wood.....	40	27	Meaford, "	Georgian bay, fishing tug.
Alice G.	4 80	"	"	36	25	Collingwood "	" " " "
J. H. McDonald	13 50	"	"	41	28	" "	" " " "
Pearl	0 83	"	"	6	4	Parry Sound "	Mill lake, passenger.
Ophir.....	1 20	"	"	11	8	" " "	Georgian bay, yacht.
Espanola.....	0 53	"	"	7	5	Toronto, "	Spanish river, passenger.
John J. Noble.	13 80	"	"	33	23	Goderich, "	Georgian bay, fishing tug.
Gravenhurst...	1 63	"	"	29	20	Gravenh'st, "	Muskoka lakes, tug.
W. E. C. U...	5 04	"	"	6	4	Detroit, Mich.	Detroit river, yacht.
Sarnia	26 66	"	"	85	58	Sarnia, Ont.	Lake Huron, tug.
Mabel M.....	1 20	"	"	7	5	Port Elgin, "	" " "
Tempest	4 80	"	Iron.....	21	14	Clevel'nd, Ohio	Sarnia and vicinity, tug.
F. B. Bradey..	4 80	"	Wood.....	29	19	Dunnville, O.	Lake Erie, "
Gordon Brown.	13 50	"	"	33	22	Port Stanley, O	" " fishing tug.
Menodora.....	20 73	"	"	73	50	Midland, Ont.	Georgian bay, tug.
Traveller	118 03	"	"	438	248	Cheb'gan, Wis.	All lakes "
Balize.....	98 66	"	"	250	158	Clevel'nd, Ohio	" " "
Kate.....	4 16	"	Composite	22	15	Toronto, Ont..	Kingston & vicinity, yacht.
Frank.....	9 60	"	Wood.....	185	154	Bay City, Mich	Owen Sound Har., dredge.
Nymph.	14 37	"	"	29	20	Milford bay, O	Muskoka lakes, passenger.
Tadinac.....	1 20	"	"	9	6	Collingwood, O	Georgian bay, yacht.
Minnicog.....	5 23	"	"	35	24	" Ont.	" " passenger.
Total.	800 53			5,550	3,669		

JOHN DODDS,
E. W. McKEAN,
Steamboat Inspectors, Toronto.

SESSIONAL PAPER No. 21

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1902; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built; and where and how employed.

EAST ONTARIO DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
White Star....	1·20	Screw....	Wood....	8·88	6·04	Lakefield, Ont.	Cos. Vict. & Peterboro, tug.
Viper.....	1·66	".....	".....	7·50	5·10	Kingston, Ont.	Pleasure yacht.
Marie.....	1·20	".....	".....	3·22	2·19	Detroit, U.S..	".....
Dorcas.....	0·53	".....	".....	2·51	1·71	Kingston, Ont.	River St. Lawrence.
Carmita.....	0·83	".....	".....	.....	.....	Carleton Place	Carleton Place & Innesville.
Sarah A.....	0·83	".....	".....	1·91	1·30	Rockport, Ont.	River St. Lawrence.
Frontenac....	17·34	".....	".....	110·76	63·94	Garden Island	"..... tug.
Martha.....	1·30	".....	".....	2·42	1·65	Kingston, Ont.	"..... pass.
Jessie Bain....	14·13	".....	".....	66·58	41·23	Clayton, N.Y.	"..... survey boat.
Total.....	39·02	.....	.....	203·78	123·16		

THOS. P. THOMPSON,
Steamboat Inspector.

MONTREAL DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Carmita.....	0·8	Screw....	Wood....	9	8	Carleton Place	Lake Nipissing, pleasure
King Edward..	48·0	Paddle....	Steel....	571	449	Wilmington, N.S..	yacht.
Salaberry.....	13·5	Screw....	Wood....	222	142	Valleyfield....	Lakes, passenger.
St. Louis.....	2·1	".....	".....	29	20	.....	R. St. Law., pass. & frt.
Amy.....	10·8	".....	".....	40	27	Cornwall.....	"..... pleasure yacht.
Gertie.....	4·8	".....	".....	21	14	Lachine.....	River, tug.
May.....	3·6	".....	".....	21	15	Middleton Ct., U.S..	Canal ".....
Coulonge.....	2·7	Paddle....	".....	18	12	Sand Point, Ont.....	R. St. Lawrence, pleasure
Leo.....	0·53	Screw....	".....	2	1	.....	yacht.
Monarch.....	16·0	Paddle....	".....	37	.....	Montreal.....	Ottawa river, warp tug.
Madoc.....	0·5	".....	".....	8	6	Sturgeon Falls	"..... ferry.
Alice.....	8·1	Screw....	".....	26	18	Kippewa.....	Lake Nipissing, warp tug.
Total.....	111·43	..	...	1,004	712		".....

WM. LAURIN,
LOUIS ARPIN,
Steamboat Inspectors.

2-3 EDWARD VII., A. 1903

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1902; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built; and where and how employed.

QUEBEC DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
L'rdStrathcona	212·6	T.S., tug..	Steel.....	495	76	South Shield, 1902..	T.S., pass. and tug, used for wrecking.
Gaspesien ex Darkworth..	70·01	Scr'w pass	Iron.....	490	287	New Castle, 1874....	Screw, pass., Montreal and Gaspé coast.
Aloyon.....	4·26	T.S., ferry	Wood....	44	30	St. Anne Chicoutimi, 1902	T.S., ferry boat, between Chicoutimi & St. Anne.
King Edward .	58·06	Scr'w pass	Steel..	355	155	Hull, 1902...	Screw, pass., Montreal and Labrador coast.
Maria.....	9·6	" tug.	Wood....	31	21	Portneuf, 1901	Screw, tug, Montreal and Quebec.
Mary.....	29·06	" pass	Iron.....	108	59	Hull, 1884....	Screw, pass., Quebec and Labrador coast.
Murial.....	24·0	" tug.	Wood....	64	44	Quebec, 1902..	Screw, tug, Quebec and Chicoutimi.
St. Louis.....	2·13	" "	"	17	11	Grande Piles, 1901.....	Screw, tug, St. Maurice River.
Ontaritze.....	2·13	" "	"	18	12	Quebec, 1902..	Screw, tug, L'k St. Joseph.
Roberval.....	9·6	Pad. pass.	Composite	126	71	Roberval, 1902	Pad., pass., Roberval and Paribonka.
Samson.....	6·6	T.S., pass.	"	94	64	Grande Piles, 1901.....	T.S., pass., Grandes Piles and Latuque.
St. Louis de Matebatchouan	2·4	Screw tug.	Wood....	30	20	Matebatchouan, 1902....	S.T., Lake St. John.
Total.....	429·85			1,872	850		

JOS. SAMSON,
Steamboat Inspector.

NOVA SCOTIA DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Harbinger.....	16·6	Screw....	Wood....	108·56	46·19	Shelb'rne, N.S.	Fishing boat, coasting.
Messenger....	24·0	"	"	111·53	49·16	"	" & pass., coasti'g.
City of Ghent..	32·6	"	Iron..	198·64	119·15	Gainsby, G.B.	Pass. and frt., coasting.
Mikado.....	18·2	"	Wood....	43·94	29·88	Dartm'th, N.S.	Lighter, Halifax harbour.
Fred. L. M. Paint.....	24·0	"	"	88·18	39·40	P't Hawk's'b'y	Pass., Strait of Canso.
Pawnee.....	22·8	"	"	106·80	64·73	Athens, N.Y., U.S.A.	" Bras d'Or Lakes.
Markland.....	6·0	"	"	21·92	14·91	Yarm'th, N.S.	" Yarmouth, N.S.
Alexandra.....	12·3	"	"	33·67	22·90	Sorel, P.Q....	Yacht, Halifax harbour.
Total.....	156·5			713·24	386·32		

J. P. ESDALE,
Steamboat Inspector, Halifax, N.S.

SESSIONAL PAPER No. 21

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1902, their Class and Horse-power, whether of Wood or Iron; their Gross and Registered Tonnage; where built, and where and how employed.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Addino Pad-dock.	5.0	Pad., ferry	Wood	102.94	64.85	Kingston, N.B.	No certificate was issued.
Clymens	1.6	Screw, yht	" . . .	10.36	7.07	St. John, "	Yacht, St. John harbour.
Brunswick	41.6	" pass.	"	184.27	72.72	Canning, N.S.	St. John, N.B., Canning, N.S., pass. and freight.
Zulika	4.5	" yacht	"	15.87	10.79	Gloucester, Mass., U.S.A.	Yacht, St. John river.
Alexandra. . . .	38.5	" pass.	"	200.72	136.49	Chatham, N.B.	Passenger, Miramichi river.
Grey Loggie. . .	12.0	" fr'ght	"	99.20	67.46	Loggieville, N.B.	Freight, coasting.
Total	103.2			613.39	359.38		

W. L. WARING,
Steamboat Inspector.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Dauntless.	27.3	Tug	Wood	128.30	88.53	New Westminster.	Coast B.C., towing.
New Era	8.2	"	"	55.93	37.06	Vancouver. . . .	" trading.
Viking	5.6	"	"	20.77	14.13	"	Fraser river, fishing tug.
Surprise.	2.7	"	"	74.71	50.81	"	Coast B.C., towing.
Wyefield	213.0	Freight. . .	Steel.	3,234.59	2,088.59	Port Glasgow, Scotland.	B. C. and foreign ports, freight.
York.	12.9	Twin sc'w.	"	134.00	91.12	Toronto.	Okanagan lake, freight and passenger.
Revelstoke.	9.6	Stern wh'l	Wood	308.55	178.59	Nakusp, B.C.	Columbia river, freight and passenger.
Venture	19.2	Twin sc'w.	"	654.52	409.15	Victoria	B. C. and foreign ports, cattle trade.
Mount Royal. . .	13.0	Stern wh'l	"	471.03	295.90	"	Skeena river, freight and passenger.
Victoria	197.3	Freight. . .	Iron.	2,373.87	1,506.60	Jarrow-on-Tyne, Eng.	B. C. and foreign ports, freight.
Total	508.8			7,456.30	4,760.48		

J. A. THOMPSON,
Steamboat Inspector.

VICTORIA, B.C.

2-3 EDWARD VII., A. 1903

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1902, their Class and Horse-power, whether of Wood or Iron ; their Gross and Registered Tonnage : where built, and where and how employed.

VANCOUVER AND YUKON DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Princess May .	250·0	Twin sc'w.	Steel.	1,394	697	Newcastle on Tyne	Pass. & f'ght, Vanc'r & f'gn.
Cassiar.....	42·6	Screw.....	Wood	597	383	Vancouver.. ..	" B.C waters.
Brittania.....	33·3	"	"	326	222	"	" "
Superior	10·0	"	"	44	30	Ladners, B.C.....	" tug, "
Ruth	13·5	"	"	71	48	Port Moody, B.C	Tug, "
Unican.	20·0	"	"	137	89	Vancouver.. ..	Pass. & f'ght, "
Glen Rosa.....	2·4	"	"	18	12	"	Tug, Skeena river.
Clive.	9·0	"	"	35	24	New Westminster.	" "
Dorothy	9·0	"	"	20	13	Vancouver.. ..	" B.C. waters.
Albert Lee ..	2·0	"	"	19	13	New Westminster.	" Fraser river.
Milkmaid.	0·3	"	"	7	5	Vancouver.. ..	" "
Orillia... ..	0·8	"	"	12	9	New Westminster.	" "
Fern.	3·5	"	"	24	17	Vancouver	" "
Dolphin....	8·9	"	"	20	14	Lund, B.C.....	" "
Viking..	5·6	"	"	21	14	Vancouver.. ..	" "
Hubert.	0·8	"	"	6	4	"	Yacht, "
Kootenay.	2·5	"	Composite	8	5	Nelson, B.C	" "
Psyche.....	1·5	"	Wood	3	2	Vancouver.	" "
La France	3·2	Stern wh'l	"	201	169	Le Barge, Y.T....	Pass. & fr'ght, Yukon river.
Total.	418·9			2,957	1,770		

VANCOUVER, B.C.

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector.

KEEWATIN, MANITOBA AND NORTH-WEST TERRITORIES.

Name of Vessel.	Horse Power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where built.	Where and How employed.
Gracie B	2·7	Screw	Wood ..	21·18	13·79	Winnipeg.....	Red River, passenger yacht.
Mountain Bell.	0·5	"	" ..	4·21	3·46	Collingwood..	Bow River, Banff, passenger.
Thistle	2·4	"	" ..	9·00	5·40	Rainy River..	Rainy River, pass. & freight.
Ogima	2·7	"	" ..	29·84	14·44	Selkirk.....	Lake Winnipeg, fish. tug.
Daisy	3·3	"	" ..	26·33	7·37	"	" "
Little Bobbs...	1·2	"	" ..	13·19	8·79	"	" "
Laura Grace...	16·0	"	" ..	85·56	58·19	Collingwood..	Lake Superior, tug.
Eland.....	2·7	"	" ..	30·49	20·42	Selkirk.....	Lake Winnipeg, fish. tug.
Viking	4·0	"	" ..	15·25	10·37	Rosport	Lake Superior, fish. tug.
Rose May	0·5	"	" ..	3·66	1·74	"	" "
Maud C.....	1·7	"	" ..	5·16	3·25	"	" "
Edith	2·7	"	" ..	42·95	29·49	Rat Portage..	Lake of the Woods, frt. & tug.
Maple Leaf....	0·5	"	" ..	5·21	3·55	Rosport	Lake Superior, fish. tug.
	40·9			292·83	180·36		

GEO. P. PHILLIPS,

Steamboat Inspector.

SESSIONAL PAPER No. 21

STATEMENT of Steam Vessels lost, broken up or laid up, as unfit for service, in the Dominion during the year ending June 30, 1902, and where and how employed.

WEST ONTARIO.

Name of Vessel.	Where and How last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Geo. Swann	Lake Huron, fishing tug	18	Screw, dismantled.
J. L. McEdwards	Welland Canal, tug	21	" "
Alpha	Sault and vicinity, tug	34	" "
Florence	Lake of Bays, tug	27	" "
Georgia	Georgian Bay, "	28	" "
G. A. Ranney	Little Current and vicinity, tug..	14	" foundered.
Mascot	Georgian Bay, fishing tug	21	" dismantled.
Siesta (of Kingston)	" passenger	15	" "
Maybird	Toronto and vicinity, freight	46	" "
E. Windsor	Wallaceburg & vicinity, freight..	86	" foundered.
Total		310	

JOHN DODDS,
E. W. McKEAN,
Steamboat Inspectors, Toronto, Ont.

EAST ONTARIO.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Hero	Trenton and Prescott, passenger.	342·12	Paddle, destroyed by fire.
James Swift	Kingston and Ottawa "	265·92	Screw, injured by fire ; was repaired and name changed to Rideau King.
Fearless	River St. Lawrence, tug	46·38	Screw, Hull used up.
Total		654·42	

THOS. P. THOMPSON,
Steamboat Inspector.

2-3 EDWARD VII., A. 1903

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

MONTREAL DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Monarque.....	River, tug.....	136	Paddle, wrecked in the ice.
Tiber.....	Freight and passenger, coasting	1,736	Screw, foundered.
Hiram Robinson.....	River, tug.....	61	Twin screw, dismantled.
Shickluna.....	" ".....	66	Screw, broken up.
Hurtubise.....	" ".....	46	" "
Eileen.....	" ".....	11	" "
Mattawa.....	" passenger.....	22	" unfit for service.
Lottie.....	" ".....	10	" "
Thurso.....	" ferry.....	20	Paddle "
W. Ross.....	" tug.....	14	Screw, broken up.
Winona.....	" ".....	12	" wrecked in the ice.
Gertie.....	Canal ".....	17	" dismantled.
Total.....		2,151	

WM. LAURIE,
LOUIS ARPIN,
Steamboat Inspectors.

QUEBEC DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Nil.....			

JOS. SAMSON,
Steamboat Inspector.

NOVA SCOTIA DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Scotia.....	Tug, Avon river.....	41·58	Screw, broken up.
Alpha.....	Passenger, coasting.....	306·91	" "
City of St. John.....	" ".....	709·12	Paddle "
Pinafore.....	Tug ".....	25·86	Screw "
Fairy.....	Water boat, Lunenburg.....	15·55	" sold to foreigners.
Richelieu.....	Yacht, Halifax harbour.....	33·67	" name changed to Alexandria.
Total.....		1,132·69	

J. P. ESDAILE,
Steamboat Inspector, Halifax, N.S.

SESSIONAL PAPER No. 21

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Addino Paddock.....	Ferry, Rothesay to Clifton....	102·94	Paddle, burned at Clifton, King's Co., June 15, 1902; cause unknown.
Lina	Tug, Miramichi river.....	23·40	Screw, machinery taken out and put in freight schooner Grey Loggie.
	Total	129·34	

W. L. WARING,
Steamboat Inspector.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Red Star.....	Kootenay lake, towing.....	14·81	Screw, tug, broken up.
Marion.....	" " " "	14·78	" " "
Penticton	Okanagon lake "	49·69	" " "
	Total	79·28	

J. A. THOMSON,
Steamboat Inspector, Victoria, B. C.

BRITISH COLUMBIA AND YUKON DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Swan.....	Tug, B. C. waters.....	17	Screw, hull condemned.
City of Columbia.....	" " " "	26	" " "
Viking.....	" " " "	27	" burnt.
Advance.....	" Skeena River.....	36	" hull condemned.
Vera.....	" " " "	6	" machinery taken out.
Royal City.....	P. and F., Fraser River.....	200	Stern wheel, burnt.
Goddard.....	Tug, Yukon River.....	87	" sunk.
Glenora	P. and F., Yukon River	542	" burnt.
Mona.....	" " " "	278	" " "
Flora.....	" " " "	101	" dismantled.
Ora	" " " "	101	" " "
Nora.....	" " " "	101	" " "
Gold Star.....	" " " "	168	" " "
Clara.....	" " " "	144	" " "
		1,828	

F. M. RICHARDSON,
Steamboat Inspector, Vancouver, B C

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Concluded.*

KEEWATIN, MANITOBA AND N. W. T. DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Cecila B.	Tug, Rainy lake.	13·65	Screw, hull condemned.
Hazel.	" Lake Winnipeg.	7·52	" " "
Squaw.	" " of the Woods.	21·60	" " "
Harry Montgomery.	" " Winnipeg.	3·65	" " "
Nettie	" " Superior.	3·34	" " "
Sultana.	" " Winnipeg.	277·65	" machinery taken out, hull converted into a barge.
		327·41	

GEO. P. PHILLIPS,
Steamboat Inspector.

LIST of Certificates of Competency and Temporary Certificates granted to Engineers of Steamboats, during the year ended June 30, 1902.

Number of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1901.					\$ cts.
2961	July 2..	Alexander Duprey.	Temporary . . .	Pictou, N.S.	Halifax.	2 00
2962	" 2..	Napoléon Dontigny.	" . . .	Grandes Piles, P.Q.	Grandes Piles.	2 00
2963	" 2..	Edouard Rivard.	" . . .	"	"	2 00
2964	" 2..	Edward Cowan.	" . . .	Halifax, N.S.	Halifax.	2 00
2965	" 2..	Geo. Edward Morton.	4th Class.	Windsor, Ont.	Windsor.	5 00
2966	" 2..	Chas. F. Brown.	Temporary . . .	Brockville, Ont.	Kingston	2 00
2967	" 3 .	Frederick Windsor.	" . . .	Callandar, Ont.	Callandar.	2 00
2968	" 3..	John McCaw.	" . . .	Dorset, Ont.	North Bay.	2 00
2969	" 9..	Patrick Burke.	4th Class.	Victoria, B.C.	Victoria	5 00
2970	" 9..	James Cochrane.	4th "	Nelson, B.C.	"	5 00
2971	" 9..	Jas. Lawrence.	Temporary . . .	Parry Sound, Ont.	Parry Sound.	2 00
2972	" 9..	Wilfred France, jr.	" . . .	Muskoka Mills, Ont.	Penetang'hene	2 00
2973	" 12..	Irénée Rivard.	" . . .	Grandes Piles, P.Q.	Grandes Piles.	2 00
2974	" 12..	Théophile Côté.	" . . .	"	"	2 00
2975	" 13..	Timothy Whitred	" . . .	Hastings, P.Q.	Hastings	2 00
2976	" 13..	Mitchell Kenville.	" . . .	Brockville, Ont.	Brockville	2 00
2977	" 13..	Andrew Lajeunesse.	" . . .	Peterboro, Ont.	Peterboro.	2 00
2978	" 13..	John McGraw.	" . . .	Brockville, Ont.	Brockville	2 00
2979	" 13..	Zaccheus White.	" . . .	Lakefield, Ont.	Lakefield	2 00
2980	" 19..	Geo. Thos. Leach.	" . . .	Montreal, P.Q.	Montreal.	2 00
2981	" 22..	Wilfried Trottier.	" . . .	Roberval, P.Q.	Roberval.	2 00
2982	" 22..	Geo. Fredk. Beaumont.	" . . .	Bracebridge, Ont.	Port Carling.	2 00
2983	" 22..	Wm. J. McEntyre.	" . . .	Port Sidney, Ont.	Toronto	2 00
2984	" 22..	George Moreau.	" . . .	Waubauskene, Ont.	Waubauskene.	2 00
2985	Aug. 1..	Pierre Marchildon	" . . .	Sturgeon Falls, Ont.	Montreal	2 00
2986	" 1..	Jos. G. Sampson	" . . .	North Hatley, P.Q.	North Hatley.	2 00
2987	" 6..	John McCoy	" . . .	Amherstburgh, Ont.	Amherstburgh	2 00
2988	" 9..	Jeremiah Downey.	" . . .	Rat Portage, Ont.	Rat Portage	2 00
2989	" 9..	Wm. F. Brown.	" . . .	Winnipeg, Man.	Winnipeg.	2 00
2990	" 9..	Chas. W. Dalby.	" . . .	Rat Portage, Ont.	Rat Portage.	2 00
2991	" 9..	Wm. Humphreys.	" . . .	Dryden, Ont.	Wabigood	2 00
2992	" 9..	Ronald Fredk. Link.	" . . .	Gravenhurst, Ont.	Port Carling.	2 00

SESSIONAL PAPER No. 21

LIST of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	When Examination was passed.	Fee.
	1901.					\$ cts.
2993	Aug. 19.	Thos. Henry Wilson	Temporary	Fort Frances, Ont.	Fort Frances.	2 00
2994	" 19.	Wm. Keating	"	Halifax, N.S.	Halifax	2 00
2995	" 19.	James Connolly	"	Niagara on the Lake	Niagara on the Lake	2 00
2996	" 27.	John A. Camber	"	Georgeville, P.Q.	Georgeville	2 00
2997	" 27.	Ernest Gouin	4th Class	Lachine, P.Q.	Montreal	5 00
2998	" 27.	George Edwin Scott	Temporary	Guysboro, N.S.	Halifax	2 00
2999	" 27.	Alexander Anderson	4th Class	Halifax, N.S.	"	5 00
3000	Sept. 17.	Clovis Bellefeuille, jr.	Temporary	Valleyfield, P.Q.	Montreal	2 00
3001	" 17.	Henry Good	"	Napanee, Ont.	Kingston	2 00
3002	" 17.	Wm. John Poole	"	Poole's Resort, Ont.	"	2 00
3003	" 17.	Fredk. M. Young	"	Young's Point, Ont.	"	2 00
3004	" 17.	Martin Boston	"	Apple River, N.S.	St. John, N.B.	2 00
3005	" 17.	Albert Martin	"	Gravenhurst, Ont.	Gravenhurst	2 00
3006	" 17.	Wm. B. Thomson	4th Class	Victoria, B.C.	Victoria, B.C.	5 00
3007	" 17.	Alexander P. Cowie	4th " U.K.	Douglastown, N.B.	St. John, N.B.	5 00
3008	" 17.	Albert L. Prince	2nd " U.K.	St. John, N.B.	"	5 00
3009	" 23.	Philippe, Blette	4th " "	Sorel, P.Q.	Sorel	"
3010	" 24.	Frank C. Ward	3rd " "	Halifax, N.S.	Quebec	5 00
3011	Oct. 4.	Albert Yetter	Temporary	Dartmouth, N.S.	Halifax	2 00
3012	" 4.	Herbert R. Stevens	"	Huntsville, Ont.	Huntsville	2 00
3013	" 4.	Loren B. Church	"	Chester, N.S.	Halifax	2 00
3014	" 24.	Henry Webster	2nd Class	Halifax, N.S.	"	5 00
3015	" 24.	William Belsom	4th " "	Windsor, Ont.	Windsor, Ont.	5 00
3016	" 24.	George D. Collins	3rd " "	Yarmouth, N.S.	Halifax	5 00
3017	Oct. 29.	George Shannon	4th Class	Burritt's Rapids, Ont.	Kingston	5 00
3018	" 31.	Wm. Powles	Temporary	Tyendinaga, Ont.	"	2 00
3019	" 31.	John C. Hudson	"	Barrys Bay, Ont.	Barrys Bay	2 00
3020	" 31.	Martin L. Crandell	"	Port Perry, Ont.	Kingston	2 00
3021	Nov. 7.	Wm. Noonan	1st Class	Hamilton, Ont.	Toronto	5 00
3022	" 7.	Jas. Clifford Kelly	2nd " U.K.	Halifax, N.S.	Halifax	5 00
3023	" 16.	John Ezra Schell	2nd " "	Victoria, B.C.	Victoria	5 00
3024	" 16.	David McKechnie	3rd Class	Slocan, B.C.	"	5 00
3025	Dec. 7.	John Gillis Clark	2nd " U.K.	Charlottetown, P.E.I.	Halifax	†
3026	" 7.	Charles LeRiche	4th Class	Garden Island, Ont.	Kingston	5 00
3027	" 7.	Joseph Sauvageau	4th " "	Champlain, Que.	Montreal	5 00
3028	" 7.	Robert C. Sinclair	4th " "	Warton, Ont.	Toronto	5 00
3029	" 30.	John Henry Near	4th " "	Point Edward, Ont.	Sarnia	5 00
3030	" 30.	George W. Dean	4th " "	Fort Erie, Ont.	Toronto	5 00
3031	" 30.	Fred K. Allen Dunn	4th " "	Orillia, Ont.	"	5 00
3032	" 30.	Jas. Wilson Smedley	4th " "	Victoria, B.C.	Victoria	5 00
3033	" 30.	Arthur Lee	4th " "	Vancouver, B.C.	Vancouver	5 00
3034	" 30.	John E. Angus	4th " "	Gore Bay, Ont.	Little Current	5 00
3035	" 30.	Leonard Rumley	4th " "	Meaford, Ont.	Thessalon	5 00
3036	" 30.	Joseph Falardeau	4th " "	Village Bienville, Que.	Quebec	5 00
3037	" 30.	John Wm. Whitworth	3rd " "	Victoria, B.C.	Victoria	5 00
3038	" 30.	Lorne R. Unsworth	3rd " "	Charlottetown, P.E.I.	St. John	5 00
3039	" 30.	Albert E. Lewis	3rd " "	Bruce Mines, Ont.	Sault St. Marie	5 00
3040	" 30.	Duncan McLeod	2nd " "	Collingwood, Ont.	Toronto	5 00
3041	" 30.	Jas. J. Flanagan	2nd " U.K.	Victoria, B.C.	Victoria	5 00
3042	" 30.	Arthur Wm. Moody	2nd " "	Halifax, N.S.	Halifax	5 00
3043	" 30.	Thos. R. Ferguson	1st " "	Quebec, Que.	Quebec	5 00
3044	" 30.	Thos. W. Allan	1st " "	Vancouver, B.C.	Vancouver	5 00
3045	Jany. 8.	Richard J. Riley	Temporary	Annapolis, N.S.	St. John	2 00
3046	" 10.	Kenneth Dunbar	4th Class	Montreal, Que.	Montreal	5 09
3047	" 10.	Philip J. Lahey	4th " "	Dartmouth, N.S.	Halifax	5 00
3048	" 10.	Ernest Leclaire	3rd " "	Lachine, Que.	Montreal	5 00
3049	" 10.	Damon S. LaRue	3rd " "	Desoronto, Ont.	Kingston	5 00
3050	" 10.	Peter J. McKanna	4th " "	Brewers Mills, Ont.	"	5 00
3051	" 22.	Edgar A. Prince	4th " "	Toronto, Ont.	Toronto	5 00
3052	" 22.	John B. McLaren	4th " "	Owen Sound, Ont.	"	5 00
3053	" 22.	Thomas B. Jones	4th " "	Kingston, Ont.	Kingston	*
3054	" 22.	John Burr	4th " "	Owen Sound, Ont.	Toronto	5 00
3055	" 22.	Alfred Ouellet	4th " "	St. Jean Portjoli, Que.	Quebec	5 00
3056	" 22.	Jonas Johnson	4th " "	Vancouver, B.C.	Vancouver	5 00

* Second examination.

† Exchanged certificate.

2-3 EDWARD VII., A. 1903

List of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1902.					\$ cts.
3057	Jan. 22.	Wm. Wallace McLaren...	2nd " U. K.	Georgetown, P.E.I.	St. John.....	5 00
3058	" 22.	Arthur F. Foote	2nd Class.....	Toronto, Ont.	Toronto	5 00
3059	" 22.	Charles A. Sullivan.....	2nd "	Windsor, Ont.	"	5 00
3060	" 22.	William Tracey.....	Temporary	Barrie, Ont.	"	2 00
3061	" 22.	Clowes Banks.....	"	St. Marys, N.B.	St. John	2 00
2062	" 22.	John Leonard.....	"	St. John, N. B.	"	2 00
3063	" 29.	Horace Lee Waring.	1st Class U.K.	"	"	5 00
3064	" 29.	George M. Taylor.....	4th Class.	Vancouver, B.C.	Vancouver....	5 00
3065	" 29.	Robert H. Grierson.	3rd "	Collingwood, Ont.	Toronto	5 00
3066	" 29.	Daniel Brisbin.	3rd "	Picton, Ont.	Kingston.....	5 20
3067	Feby. 26.	Herbert R. Stevens.....	4th "	Huntsville, Ont.	Toronto	5 00
3068	" 26.	Geo. Robt. McDonald.....	4th "	Owen Sound, Ont.	"	5 00
3069	" 26.	Arthur Godin.....	4th "	Sorel, Que	Sorel.....	5 60
3070	" 26.	Jos. A. Silverthorn.....	4th "	Midland, Ont.	Toronto	5 00
3071	" 26.	James G. Fisher.....	2nd "	Collingwood, Ont.	"	5 00
3072	" 26.	Albert Martin.....	Temporary.....	Gravenhurst, Ont.	Gravenhurst..	2 00
3073	" 26.	Frank Krafne.....	"	Barrington, N.S.	Halifax.....	2 00
3074	" 26.	Robt. Francis Craig	"	Barrie, Ont.	Toronto	2 00
3075	March 7.	Wm. McCallum.....	4th Class.....	Hamilton, Ont.	Toronto	5 00
3076	" 7.	Delbert Becker.....	4th "	Vancouver, B.C.	Vancouver....	5 00
3077	" 7.	Chas. Edmund King.....	4th "	Hamilton, Ont.	Toronto	5 00
3078	" 7.	George M. Gerow.....	4th "	Picton, Ont.	Kingston.....	5 00
3079	" 7.	John N. Burke.....	4th "	Kingston, Ont.	"	5 00
3080	" 7.	Frank Black.. ..	4th "	Brockville, Ont.	"	5 00
3081	" 7.	Henry A. Leslie.....	4th "	Kingston, Ont.	"	5 00
3082	" 7.	John H. Talbot	4th "	Victoria, B.C.	Victoria	5 00
3083	" 7.	Thomas Finlin	4th "	Morton, Ont.	Kingston.....	5 00
3084	" 7.	Wm. James Buckley.....	4th "	Leith, Ont.	Toronto	5 00
3085	" 7.	Samuel Robert Roberts...	3rd "	Victoria, B.C.	Victoria.....	5 00
3086	" 7.	Jas. Alex. Scott.....	3rd "	Collingwood, Ont.	Toronto	5 00
3087	" 7.	Alexander Ross	3rd "	Victoria, B.C.	Victoria.....	5 00
3088	" 7.	Daniel A. Boyd	3rd "	Arrowhead, B.C.	"	5 00
3089	" 7.	Arthur Jas. McCardie....	3rd "	Vancouver, B.C.	Vancouver....	5 00
3090	" 7.	Edward G. Newell.	3rd "	Toronto, Ont.	Toronto	5 00
3091	" 7.	George Wm. Clarkson.....	3rd "	"	"	5 00
3092	" 7.	John R. Davidson.....	2nd " U.K.	Brisbane, Australia.....	Victoria.....	5 00
3093	" 7.	Hedley R. Welch.....	2nd "	Oshawa, Ont.	Toronto	5 00
3094	" 7.	John H. Alexander.....	2nd "	Victoria, B.C.	Victoria	5 00
3095	" 7.	George Clark.....	Temporary.....	Morrisburg, Ont.	Kingston.....	2 00
3096	" 7.	Ronald F. Link	"	Gravenhurst, Ont.	Toronto	2 00
3097	" 19.	John K. Sutherland.....	2nd Class U.K.	Louisburg, N.S.	Halifax.....	5 00
3098	" 19.	George N. Smith.....	2nd "	Midland, Ont.	Toronto	5 00
3099	" 19.	George P. Fitzpatrick	4th "	Aylmer, Que.	Montreal.....	5 00
3100	" 19.	Alexander Barton	2nd "	Kingston, Ont.	Kingston.....	5 00
3101	" 19.	Henry Jansen	4th "	Barrie, Ont.	Toronto	5 00
3102	" 19.	Francis Mich. Tierney....	2nd " U.K.	Dartmouth, N.S.	Halifax.....	5 00
3103	" 19.	Henry D. Hornibrook.....	4th "	Victoria, B.C.	Victoria.....	5 00
3104	" 19.	Paul Landry.. ..	4th "	Sorel, Que.	Sorel.....	5 00
3105	" 19.	Arthur Ruel.....	4th "	Village Bienville, Que.	Quebec.....	*
3106	" 19.	Norman A. Currie.....	1st " U.K.	Charlottetown, P.E.I.	St. John.....	5 00
3107	" 19.	George Noel.....	2nd "	Luskville, Que.	Montreal.....	5 00
3108	April 8.	Charles Smith	Temporary	Rat Portage, Ont.	Rat Portage..	2 00
3109	" 8.	Edgar P. Stiang.....	"	Sydney, C.B.	Halifax.....	2 00
3110	" 8.	Walter D. Booker.....	"	Rat Portage, Ont.	Rat Portage..	2 00
3111	" 8.	Geo. Edwin Scott.....	"	Guysboro, N.S.	Halifax.....	2 00
3112	" 8.	Arthur Seguin.....	"	Hudson, Que.	Montreal.....	2 00
3113	" 8.	Frederic M. Young.....	"	Youngs Point, Ont.	Kingston.....	2 00
3114	" 8.	Andrew Lajeunesse.....	"	Peterboro, Ont.	"	2 00
3115	" 9.	Chas. Henry Clay.....	4th Class.....	Vancouver, B.C.	Vancouver....	*
3116	" 9.	Arthur Pelletier.....	4th "	Montreal, Que	Montreal.....	5 00
3117	" 9.	Jean Bilodeau	4th "	"	"	5 00
3118	" 9.	Jos. Louis Madden.	4th "	Victoria, B.C.	Victoria.....	5 00
3119	" 9.	Wm. John Poole.....	Temporary.	Pooles Resort, Ont.	Kingston.....	2 00
3120	" 9.	George C. Webster.....	1st Class U.K.	Halifax, N.S.	Halifax.	5 00
3121	" 9.	Arthur C. Rudland.....	2nd " ..	San Francisco, U.S.	Victoria.....	5 00

* Second examination.

SESSIONAL PAPER No. 21

List of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1902.					\$ cts.
3122	April 9.	William Boomer.....	3rd Class....	Vancouver, B.C.....	Vancouver. . .	5 00
3123	" 9.	Arthur Letendre.....	3rd "	Sorel, Que.	Sorel.....	5 00
3124	" 17.	James Watt.....	4th "	Vancouver, B.C.....	Vancouver. . .	5 00
3125	" 17.	George Duguid.....	4th "	"	"	5 00
3126	" 17.	Alexander Blakley.....	Temporary . . .	Golden, B.C.....	Victoria.....	2 00
3127	" 28.	John Thos. Dowling.....	"	St. Andrews, N.B.....	St. John.....	2 00
3128	" 28.	Frederic W. Richardson.....	"	Deer Island.....	"	2 00
3129	" 28.	Martin Boston.....	"	Apple River, N.S.....	"	2 00
3130	" 28.	William E. Sproull.....	"	Pictou Landing, N.S.....	Halifax. . . .	2 00
3131	" 28.	Arthur McCann.....	"	Wallace, N.S.....	"	2 00
3132	" 28.	Emery Scott	"	Keewatin, Ont.....	Rat Portage..	2 00
3133	" 28.	Alfred McCall.....	"	Rat Portage, Ont.....	"	2 00
3134	" 28.	James W. Brown.....	"	"	"	2 00
3135	" 29.	Joseph Guay.....	3rd Class....	Village Bienville, Que.	Quebec.....	5 00
3136	" 29.	Joseph Chapdelaine.....	4th "	Sorel, Que.....	Sorel.....	5 00
3137	" 29.	Thomas K. Abra	3rd "	Vancouver, B.C	Vancouver.....	5 00
3138	" 29.	Wm. Joseph Campbell.....	3rd "	Pictou, N.S	Halifax. . . .	5 00
3139	" 29.	Wenceslas Chretien.....	4th "	Sorel, Que	Sorel.....	5 00
3140	" 29.	Harris L. Lockhard.....	3rd "	Hantsport, N.S.....	Halifax.....	5 00
3141	" 29.	Rosario Casey	4th "	Village Bienville, Que.	Quebec.....	5 00
3142	" 29.	George Bourret.....	3rd "	Sorel, Que	Sorel.....	5 00
3143	" 29.	Charles C. Evans.....	2nd " U.K.	Montreal, Que.....	Quebec.....	5 00
3144	" 29.	Charles D. Cooke.....	1st "	Louisburg, C.B.....	Halifax. . . .	5 00
3145	" 29.	Henry F. McKay	1st "	New Glasgow, N.S.....	"	5 00
3146	May 5.	Henry A. Leslie.....	Temporary . . .	Kingston, Ont.....	Kingston.....	2 00
3147	" 5.	Wm. Burns	"	Rat Portage, Ont.....	Rat Portage..	2 00
3148	" 5.	John J. Bellefeuille	"	"	"	2 00
3149	" 5.	Alex. M. Innis.....	2nd Class....	Parrsboro', N.S.....	Halifax.....	5 00
3150	" 5.	Paul Bolduc.....	2nd "	Village Bienville, Que.	Quebec.....	5 00
3151	" 5.	Adelard Gendron.....	3rd "	Sorel, Que.....	Sorel.....	5 00
3152	" 5.	Wm. Burgoyne.	Temporary . . .	Fenelon Falls, Ont.....	Kingston.....	2 00
3153	" 5.	Arthur Davis.....	"	Pooles Resort, Ont	"	2 00
3154	" 5.	Zaccheus White	"	Lakefield, Ont	"	2 00
3155	" 6.	Geo. Morris Beecher.....	"	Brockville, Ont.....	Brockville.....	2 00
3156	" 15.	James Chas. Barry.. . . .	"	Lefroy, Ont.....	Toronto.....	2 00
3157	" 15.	Wm. Jas. McIntyre	"	Port Sydney, Ont.....	"	2 00
3158	" 15.	Peter Geo. Cavanagh.....	"	Perth, Ont.....	Montreal.....	2 00
3159	" 15.	John Edward Ball.....	"	Caesarea, Ont.....	Lindsay	2 00
3160	" 23.	Joseph Trottier.....	2nd Class....	Champlain, Que.....	Quebec.....	5 00
3161	" 23.	John J. Coones.....	Temporary . . .	Bridgenorth, Ont	Kingston.....	2 00
3162	" 23.	Alex. McLeod.....	3rd Class....	Vancouver, B.C.....	Vancouver.....	5 00
3163	" 23.	Henry Gaerdes.	4th "	Victoria, B.C.....	Victoria.....	5 00
3164	" 23.	John Moyes.....	4th "	Vancouver, B.C.....	Vancouver.....	5 00
3165	" 23.	Germain Lippie	4th "	Sorel, Que.....	Sorel.....	5 00
3166	" 23.	James Petticrew.....	1st " U.K.	Victoria, B.C.....	Victoria.....	5 00
3167	" 26.	Daniel O'Donnell.....	Temporary . . .	Belleville, Ont.....	Belleville.....	2 00
3168	" 29.	Isaac Jas. Boynton.....	"	Bobcaygeon, Ont.....	"	2 00
3169	" 31.	Theophile Beaudette.....	"	Buckingham, Que.....	Buckingham..	2 00
3170	" 31.	Joseph Thibault.....	"	Val de Bois, Que.....	Val de Bois... .	2 00
3171	June 3.	Alonzo W. Daball.....	"	Parry Sound, Ont.....	Parry Sound..	2 00
3172	" 4.	Arthur Poole.....	"	Selkirk, Man.....	Selkirk.	2 00
3173	" 4.	Frank Newall.....	"	Halifax, N.S.....	Halifax.....	2 00
3174	" 7.	Thos. W. Fultz.....	"	"	"	2 00
3175	" 7.	W. F. Brown.....	"	Winnipeg, Man.....	Winnipeg.....	2 00
3176	" 23.	James H. Wilson.....	"	Fort Francis, Ont.....	Fort Frances..	2 00
3177	" 23.	Fredk. W. Coates	"	"	"	2 00
3177	" 26.	Joseph E. Bandoek.....	"	Almaville, Que.....	Almaville.....	2 00
3179	" 26.	Theophile Côté.....	"	Grandes Piles, Que.....	Grandes Piles..	2 00
3180	" 26.	Irénée Rivard.....	"	"	"	2 00
3181	" 26.	Edouard Rivard.....	"	"	"	2 00
3182	" 26.	André Donaldson.....	"	Peribonka, Que.....	Roberval	2 00

2-3 EDWARD VII., A. 1903

APPENDIX No. 13.

REWARDS FOR SAVING LIFE.

Names and Designations of Persons.	Nature of Services rendered.	Date of Services rendered.	Description of Reward.
G. S. McDougall, master; M. McPhee, 1st mate; Wm. Lockerbie, 1st engineer; F. J. Davis 2nd mate; J. W. Davey, 2nd engineer; D. McIntyre, F. Smith, wheelmen; W. Collison, J. Barrett, lookouts; H. Day, P. Day, A. Sea, S. McLennan, J. Sutherland, W. Scott, sailors of C.P.R. SS. <i>Athabasca</i> .	Rescuing crew from U. S. barge <i>Preston</i> .	June 29, 1901..	Gold watch from President of the United States, and silver jug from Dept. of M. and F. to master, a binocular glass to 1st mate, a gold medal to 1st engineer, and a silver medal each to the 2nd mate, 2nd engineer and men.
Oldney Watkins, master; H. Hilton, chief mate; J. Brooks, A.B.; W. O'Leary, A.B. and J. Boyle, A.B. of the SS. <i>City of Exeter</i> , of Bristol, England.	Rescuing crew of schooner <i>Clifton</i> , Windsor, N.S.	Jan. , 1902..	A binocular glass to master, a gold watch to the mate, and \$10 to each of the men.
C. O. Wills, master; William Woodward, 1st officer; Carl Wicht, boatswain; J. Hellstrom, A.B.; O. Thiel, A.B.; J. Bjvonvick, A. B.; John Carmichael, A.B., of SS. <i>Garton</i> .	Rescuing crew of shipwrecked barque <i>Galatea</i> , of St. John, N.B.	Feb. 15, 1899..	A binocular glass to master, a gold watch to 1st officer, and \$10 to each of the men.*
R. V. Bennett, 1st mate of SS <i>Ardora</i> , Liverpool, G.B.	Services rescuing crew of Norwegian barque <i>Clara</i> .	Jan. . ., 1901..	Silver medal from Norwegian government, and award stamped on Master's Certificate No. 3,439.
M. G. Clark, lightkeeper and John Roberts, assistant.	Rescuing two Indians from drowning near Entrance Island, B.C.	July 10, 1901..	A binocular glass to each.
Philip Gallant, Summerside, P.E.I.	Rescuing two fishermen from drowning.	April, 1901..	A binocular glass.
Arthur Meisner, Thomas Meisner and Loran Meisner.	Rescuing three fishermen near Meisner's Island, Lunenburg, N.S.	Mar. 6, 1901..	\$3 apiece.
Ernest Kinney, master; Chas. Kinney, 2nd mate; Harry Doucette, A. B.; H. McKinnon, A. B.; Walter Pershong, A.B.; Richard Lyons, A.B., and Robert French, A.B., seamen, of SS. <i>Prince Arthur</i> .	Rescuing crew of schooner <i>Waubeck</i> , N.B.	Oct. 10, 1900..	Binocular glass to master, a silver watch to 2nd mate, and \$10 apiece to the men.
Albert Cheney, Lloyd Cheney and Arthur Cheney.	Rescuing crew of American schooner <i>Velma</i> , wrecked on Murr Ledges.	Oct. 17, 1900..	Gold watch, chain and charm to Albert Cheney, and a gold medal each to Lloyd and Arthur Cheney, from the President of the United States.

* The money was unclaimed.

APPENDIX No. 14.

REPORT OF CHAIRMAN OF BOARD OF EXAMINERS OF MASTERS
AND MATES.

HALIFAX, N.S., November 5, 1902.

To the Deputy Minister of Marine and Fisheries, Ottawa.

SIR,—I have the honour to submit, for the information of the Honourable the Minister of Marine and Fisheries, the annual report of the proceedings of the Board of Examiners of Masters and Mates, from June 30, 1901, to June 30, 1902, the end of the fiscal year.

Examinations for candidates for certificates of competency, sea-going, were held as follows :—

At Halifax, four times ; at St. John, six times ; at Yarmouth, seven times, and at Quebec once, making eighteen times in all.

There were also eleven examinations held at Victoria, the papers and problems having been sent to the Chairman at Halifax for his inspection and confirmation.

At Halifax one application was made for a sea-going certificate of competency as master, and three for master coasting and inland waters ; one sea-going and three masters for coasting and inland waters received certificates. Nine applications were made for sea-going certificates as mate and three for mates coasting and inland ; eight sea-going and three coasting and inland mates received certificates.

At St. John six applications were made for sea-going certificates of competency as master, and four for masters coasting and inland ; six sea-going masters and four masters for coasting and inland waters received certificates. Four applications were made for sea-going certificates as mate, and two for mates coasting and inland waters ; three sea-going and two coasting and inland mates received certificates.

At Yarmouth two applications were made for sea-going certificates of competency as master, and eight for mates' certificates ; and two masters and eight mates received certificates.

At Quebec one application was made for a certificate of competency as mate sea-going and was successful.

At Victoria three applications were made for sea-going certificates of competency as master, and eight for mates' certificate ; three masters and seven mates received certificates.

It can therefore be seen that twelve applications were made for masters' certificates of competency sea-going, and thirty for mates' during the year ; twelve masters and twenty-seven mates received certificates ; also seven applications for certificates as master competency, coasting and inland waters were made to the Board of Examiners, and five for mates' certificates ; seven masters and five mates received certificates.

Two certificates of service were issued through the Halifax office for master coasting and one for mate, also one renewal certificate.

The total number of certificates issued by the Department of Marine and Fisheries during the fiscal year, including competency, service and renewal, upon application to the Board of Examiners at Halifax, was fifty-five, and fees to the amount of \$476 were collected and deposited to the credit of the Receiver-General.

The fees collected by the examiner at Victoria are sent by him direct to the department and are not included in the above amount.

Amongst the applicants enumerated above some presented themselves a second time for examination, having previously failed to pass.

2-3 EDWARD VII., A. 1903

During the year the only examiners for officers in the foreign or oversea trade has been Captain James Gaudin, the agent for the department at Victoria, who examines them in seamanship and other matters.

The problems in navigation generally are forwarded by him to me, when, if satisfactory, the papers are transmitted to the department from this office.

At Halifax the examiner in seamanship, Captain David Hunter, has been incapacitated by illness since prior to the death of the late Chairman, Captain W. H. Smith, R.N.R.

At St. John, N.B., the vacancy caused by the death of Captain Wm. Thomas in November, 1899, has not been filled; consequently the whole examination for that port for foreign-going and coasting certificates still devolves on me.

During the past year Captain Alexander Cameron, holding an Imperial Board of Trade certificate of competency, as master ordinary, has been appointed examiner of candidates for masters' and mates' certificates for coasting, inland and minor inland waters.

I have the honour to be, sir,
Your obedient servant,
BLOOMFIELD DOUGLAS, R.N.R.,
Acting Chairman.

STATEMENT showing the number of applicants examined by the Board of Examiners for Certificates of Competency, sea-going and coasting, at the ports of Halifax, St. John, Yarmouth and Quebec, for the year ending June 30, 1902.

Port.	Month.	APPLICANTS.		PASSED.		FAILED.		Fees.
		Masters.	Mates.	Masters.	Mates.	Masters.	Mates.	
								\$ cts.
Halifax.....	August.	1-C	2-F 1-C	1-C	5-F 1-C			61 00
St. John.....	September.....	3-F 1-C		3-F 1-C				60 00
Yarmouth.....	"	1-F						15 00
"	October		2-F		2-F			16 00
St. John.....	November.. ..	1-F	1-F	1-F			1-F	23 00
Yarmouth.....	"		1-F		1-F			8 00
"	December .		2-F		2-F			16 00
Halifax.. ..	"	1-F	2-F	1-F	2-F			31 00
St. John.....	January		1-F		1-F			8 00
Yarmouth.....	"		2-F		2-F			16 00
Quebec	"		1-F		1-F			8 00
St. John . . .	February.. ..	2-F 1-C		2-F 1-C				45 00
Yarmouth.....	"	1-F		1-F				15 00
Halifax.....	March	1-C	1-C	1-C	1-C			21 00
St. John . . .	April	1-C	1-F 1-C	1-C	1-F 1-C			29 00
Halifax.....	"	1-C	1-F 1-C	1-C	1-C		1-F	29 00
"	May.....		1-F		1-F			
St. John... ..	"	2-C	1-F 1-C	2-C	1-F 1-C			30 00
Yarmouth.....	"		1-F		1-F			8 00
Total.								439 00

Abbreviations.— { “F”—Foreign or sea-going.
 { “C”—Coasting (or inland).

N.B.—Some discrepancy may appear to exist between the amount of fees collected and the number of candidates examined, but this can be explained by the fact that in some cases the fee has been paid by an applicant, but his examination has not been completed within the fiscal year.

BLOOMFIELD DOUGLAS, R.N.R.,
Acting Chairman.

SESSIONAL PAPER No. 21

APPENDIX No. 15.

RECORD of Live Stock Shipped from Port of Montreal during November, 1902.

No.	Date.	Steamer.	Destination.	Sheep.	Cattle.	Horses.	Hay for Feed.	Grain for Feed.	Num- ber of Men.
	1902.								
182	Nov. 1..	Concordia.....	Glasgow.....		540	36			22
183	" 1..	Sarmatian.....	".....		240				10
184	" 4..	Manxman.....	Liverpool.....		520				21
185	" 4..	Cervona.....	London.....	240	458				19
186	" 5..	Loango.....	".....	876	98				8
187	" 6..	Pomeranian.....	".....		403	3			16
188	" 7..	Alcides.....	Glasgow.....		273				11
189	" 7..	Montcalm.....	Bristol.....	480	251				13
190	" 8..	Corinthian.....	Liverpool.....		542				22
191	" 8..	Ashanti.....	London.....	758	257				14
192	" 11..	Rosarian.....	Glasgow.....		242				10
193	" 11..	Hurona.....	London.....		471				19
194	" 15..	Lake Champlain...	Liverpool.....		533				21
195	" 16..	Monte Videan..	London.....		239				10
196	" 16..	Pretorian.....	Liverpool.....		420				17
197	" 16..	Man Importer.....	Manchester.....		421				17
198	" 16..	Bellona.....	Liverpool.....		260				10
199	" 17..	Mont agle.....	Bristol.....	508	250				12
200	" 17..	Ottoman.....	Liverpool.....	798	820				36
201	" 18..	Kastalia.....	Glasgow.....		307	35			14
202	" 19..	Lycia.....	London.....	166	259				10
203	" 20..	Kildona.....	".....	305	262				12
204	" 21..	Roman.....	Liverpool.....	842	704				32
205	" 21..	Orcadian.....	Glasgow.....		261				10
206	" 21..	Lake Ontario.....	Liverpool.....		328				9
207	" 22..	Tritonia.....	Glasgow.....	484	297				14
208	" 23..	Sicilian.....	".....	298	299	17			13
209	" 23..	Iona.....	London.....		479				19
210	" 25..	Man Commerce.....	Manchester.....		391				16
211	" 25..	Montfort.....	London.....	1,205	589				29
212	" 26..	Marina.....	Glasgow.....		300				12
213	" 26..	Man Shipper.....	Manchester.....		380				11
214	" 27..	Monterey.....	Bristol.....	309	254				12
		Total for month.....		7,269	12,348	91	3,862,165	757,386	521
		Previously reported.....		38,561	64,808	458	18,416,543	4,261,547	2,794
		Total for season 1902.....		45,830	77,156	549	22,278,708	5,018,933	3,315

TOTAL Live Stock Shipments from the year 1892, were as follows:—

No.		Sheep.	Cattle.	Horses.
214	Season of 1901.....	54,538	73,791	1,338
248	" 1900.....	34,838	92,180	2,833
239	" 1899.....	58,277	81,804	4,739
298	" 1898.....	34,991	99,189	5,283
304	" 1897.....	60,638	117,247	10,051
242	" 1896.....	76,520	96,448	10,421
224	" 1895.....	210,607	94,972	13,303
229	" 1894.....	139,780	88,635	5,623
235	" 1893.....	3,743	83,322	16,666
260	" 1892.....	15,914	98,731	1,739

POPE & MORGAN,
Inspectors.

MONTREAL, November 27, 1902.

APPENDIX No. 15.

TOTAL Live Stock Shipments for 1902.

From where Shipped.	Sheep.	Cattle, Fat.	Horses.	Hay for Feed.	Grain for Feed.	Number of Men.
				Lbs.	Lbs.	
Montreal	45,830	77,156	549	22,278,708	5,018,933	3,315
St. John.....	6,858	11,614	6,374	3,357,715	898,474	947
Charlottetown	3,733	195	.....	164,000	42,296	.....
Halifax .....	.....	162	.....	43,800	12,474	27
Quebec	3,407	3,661	.....	.....	.....	.....
Total	59,828	92,788	6,923	25,844,223	5,972,177	4,289